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THE

MODEL FARMS

AND

THEIR METHODS;

GIVING THE

EXPERIENCES OF OVER ONE HUNDRED SUCCESSFUL FARMERS IN THE VARIOUS BRANCHES OF HUSBANDRY IN DIFFERENT PORTIONS OF THE COUNTRY: STOCK RAISING; FRUIT GROWING; DAIRYING; TILE DRAINAGE; COST AND PROFITS OF MIXED HUSBANDRY, ETC.

WITH

OVER ONE HUNDRED ILLUSTRATIONS

AND

PLANS OF BUILDINGS.

EDITED BY SAMUEL T. K. PRIME.

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TO THE READER.

THE MODEL FARMS AND THEIR METHODS has been written and compiled as a Common-sense Hand-book for Farmers; and, while numerous and useful books have been published on the different branches of agriculture, it is obvious that the PLAN of this book is ENTIRELY NEW. It must be admitted, too, that the book itself is thoroughly practical and useful.

Observation of different "methods" in any branch of business, and interchange of thought among practical men, lead to the best results. The object of the book is to place before its readers only the approved and the best "methods" in Husbandry. No theorizing is given, every article being a clear statement of some system which has been thoroughly tested and found valuable in the EXPERIENCES OF OVER ONE HUNDRED FARMERS in different parts of the country. Not a line of matter in the book is selected or culled, every article having been originally prepared for it by the contributor whose name appears as such.

No pretension to literary merit is made, the "methods" being described in the language used by the narrator, so as to be easily understood by practical men. No article has been changed to adapt itself to the notions of the editor, or to the theories of any person. Nor do we hold ourselves responsible for the differences in these "methods," as they are from the pens of men of varied experience.

The editor has been impartial as to the implements used, the stock recommended, and the methods described, as they are all from the actual experience of contributors; and the character of

the men who have furnished the "Methods" is a guarantee of their usefulness and reliability.

The reader will readily see the value of the information the book contains on any particular branch, and adopt the method best suited to his own situation. To beginners the book is invaluable, as it gives full information in every branch, and by following its teachings, they can readily overcome obstacles which might otherwise cost them much outlay of time and money. To those seeking homes in the Far West, it will prove a safe and useful guide.

The index is very full, and has been prepared with great care; so the reader may easily refer to the "methods" of different contributors on any subject, in any part of the book.

In presenting this work to farmers we feel confident they will appreciate our efforts to give them a useful and valuable compendium of information.

THE EDITOR.

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CHARLES M. CULBERTSON,

NEWMAN, DOUGLASS COUNTY.

A Stock Farm — Buildings — Fields — Hereford Cattle — How and When to Breed — Rearing of Calves and Bulls — Portable Feed Racks for Cattle.

HEREFORD PARK.

My farm proper consists of two thousand acres, and as shown by the plat, is subdivided into seventeen fields of eighty acres each, and five of ten to forty acres each, besides several smaller lots for feeding purposes. I have about twenty miles of good Osage orange fence, nearly all of which will turn not only cattle, but hogs. I have a natural grove of thirty acres on one of my fields, also fifteen acres of black walnut trees that I planted myself in 1855. They have now attained a growth of from six to fifteen inches in diameter, and some of them are seventy-five feet high, and are four thousand in number. This whole tract is in pasture or meadow.

BUILDINGS.

I have a horse barn forty feet square, which will stable eighteen horses; two cattle barns, which will stall one hundred and fifty head of cattle; also a large stable for five bulls, all of which are kept in box stalls; a building twenty-four by twenty-four in which is kept the machinery for grinding and preparing feed; two cattle sheds one hundred by sixteen feet, and two fifty by fourteen; one pig-pen ten by two two hundred feet long; two tool houses; one horse shed. All

these buildings are shingled and painted. The dwelling house is one story, eighteen by seventy-six.

There are three orchards of over one thousand bearing trees, twenty-one wells of water, curbed in good shape, one hundred and ten gates of various kinds, and eight feed lots.

STOCK.

I have sixty-nine head of full-blood Hereford cattle, two hundred and forty head of half-blood Hereford cows, bulls, and calves, and about two hundred head of grade Short-Horns, consisting of cows and heifers; and thirty head of Essex hogs.

In my stock are five very fine bulls, three of which I keep for my own use, having imported them in the Fall of 1879. One, Anxiety, I consider an exceptionally fine animal, so named from the fact that the mother was lost in giving it birth. The other two imported animals are Sir Garnet, a yearling, out of the famous cow Spangle, got by Tredegar Second. I have also nine cows imported, which are also highly bred. I consider the cross of Herefords with Short-Horn grades the best for meat producing qualities, outside of full-bloods.

I first raised horses, mules, and some hogs, with but moderate results. I next went into breeding Short-Horns, but found that they were not able to rough it satisfactorily. I then crossed this breed with the Herefords, and secured an animal that I am satisfied can easily live upon grass and at the same time give the most satisfactory results. This cross, as yearlings, have found a ready sale, by the car-load, to go to the plains.

BREEDING.

My experience in breeding is that the animals should couple during the months of June, July, and August, thereby calving in the following March, April, and May, when the mother can almost immediately go on grass, giving the best flow of milk; this at the same time brings the calves into better condition for wintering. Again, the calves, weaning soon enough, get a chance at the grass before going into Winter quarters. I feed to them, in troughs, hay, with a little corn

PLAN OF FARM AND BUILDINGS.

and oats in cold weather. About a month before the calves are weaned, I have a pen made in the lot where the cows and calves graze, with a hole in the fence large enough for the calves to go through. In this pen I put troughs with corn and oats. The young calf, by this means, finds its way into the pen, and learns to eat grain before weaning. I give a good, fresh pasture to the calves during their weaning, after which they are fed from a pint to a quart of shelled corn. My practice has been to put on the calf all the fat I could with the aid of the milk from the cow. The calves stay on the grass with their shelled corn and oats until about the first of November. Then they are moved into Winter quarters, that is, a yard with open sheds, having racks to which they can have free access, and get a full supply of timothy hay, with some corn and oats.

At weaning I separate my calves, the bulls from the heifers. Those that are castrated are cut when three weeks old, and I always spay my inferior heifers. I generally turn out to grass from the first to the tenth of May, preferring that the grass have a good start first. The breeding cows are dried off while the calves are sucking. I turn off such cows as bring poor calves, putting them in a lot by themselves for feeding, and feed them ear corn. By this plan I try to have them fit for the butcher when the calves are weaned. I winter my breeding cows in open fields, feeding hay alone on the ground, selecting the dryest and highest places. When the cows begin to show signs of calving, which is readily discerned by the enlargement of the udder, I place them in breeding yards with open sheds, and a calving house fifty by fifteen. The calves remain here until they are three or four days old. In bad weather I put them in a five-acre field, which adjoins the stock yard. There are holes made through the fence, as described, so that the calves can get around the stacks. Such cows are fed hay and corn-stalks, with a small allowance of corn, say from three to five ears each. In this way the cows and calves both thrive well.

I always keep plenty of salt in the field for cattle. For

keeping my stock healthy, I use the following: One-quarter of a pound of sulphur and quarter of a pound of saltpeter, to a peck of salt. I have used this mixture with great success. If I have a case of abortion in my herd, I take the cow out at once, and if not a very valuable cow, put her to feed for the butcher. If I save her to breed again, I keep her from the rest of the herd for fully three months, for obvious reasons.

BREEDING HEIFERS.

I breed my young heifers at from the age of fifteen to twenty months, and generally in July and August, if I can. My cattle are kept on the same fields they winter upon, until the middle of June, at which time they are put upon their Summer pasturage. No more cattle are put upon the old pasture until the following November. By this rest of the pasture, the fields recuperate and have again a good supply of grass for the stock to winter upon.

My mode of watering is to dip the water into troughs, which consumes the time of one man. The water stands in the well from four to eight feet from the surface, and there is no difficulty in obtaining a bountiful supply.

BULLS.

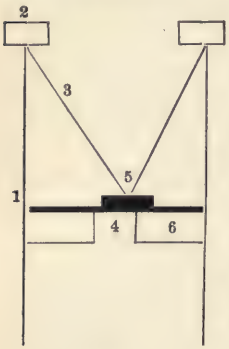
I feed my stock bulls from two to four quarts of oats and corn per day, with plenty of timothy hay, also about eight pounds of sliced beets each in the Spring of the year, increasing the oats and decreasing the corn in breeding season. The cows are kept in a herd together, with a herdsman to watch them when they come in season. When this is observed, they are driven to a breeding-yard, and bred as desired.

If the day is warm, the cow is allowed to cool for one hour before the bull is allowed to go to her, the cows then being placed in the yards alone until quieted. This is followed up until the whole herd is served, after which a bull is turned out with the herd to make sure that all the cows are with calf. I consider one good service all that is necessary. I am of the opinion that a yearling bull is better for heifers under two years, as they are not so apt to strain the heifers by heavy

weights, and lacerate the womb by hard service, which is often the case when older bulls are used. This I believe produces barrenness in many cattle. The quieter and more carefully a herd is handled the better success I have with it.

PORTABLE FEED RACKS.

I have an invention of my own like the plan below. It is all made of oak, except feed box; no nails in the frame, all bolted together:



No. 1, oak posts, four by four, seven feet long. No. 2, cap, two by five oak, sixteen feet long. No. 3, rack rounds, two by two oak, four feet long. No. 4, cross piece, four by four oak, on which the base of rack rests, bolted to up-right posts with one-half inch bolt. No. 5, two and one-half by ten, sixteen feet long bed, which receives the rounds. No. 6 is a trough running lengthwise under the eaves of the rack, eighteen inches wide and one foot deep, and is spiked to rack sill, No. 5, as marked on the plan. The troughs catch all the litter and seed, and also answer the purpose for feeding grain.

In case I wish to move these racks, I bore a hole about eight inches from the end in each of the upright posts, and bolt on a pair of runners, hitch a team, and haul them wherever I wish. These racks, as they now stand, are used for feeding large cattle. In case I wish to feed calves, I dig a post hole eighteen inches deep, and into the holes sink the posts. In the Summer I take the racks out of the holes, and stand them upon boards to prevent rotting.

HENRY CHAPMAN,

SUGAR GROVE, KANE COUNTY.

Land Needs Rest — Clover Head and Shoulders Above All Other Fertilizers — Never Cut It Twice in the Same Year — Hogs, their Feed and Management — Short Horns, Devons, Herefords — Sheep — The Dairy.

SUGAR GROVE FARM

contains 261 acres of land, 21 acres being timber, the remainder prairie. My farm is moderately rolling prairie, and for the most part dry land, suitable for cultivation in all seasons. The soil is a dark loam, with black sand enough to produce an early growth of vegetation in the Spring.

The sub-soil, commencing at a depth of from one to three feet, is yellow earth, with a mixture of sand and gravel sufficient to prevent standing water, yet not enough to leach away the fertilizings. I have a few acres with a surface soil rich in vegetable mold, but a clay sub-soil that holds the water, and it is commonly called a slough.

I have not tiled or plowed this wet land, as it produces bountifully; and in a very dry season, when other pasture lands fail, it affords plenty of feed for my stock.

I am following a mixed husbandry.

CORN IS MY FORTE,

but I raise oats and occasionally wheat, rye and barley, the latter more to help me to secure a good clover seeding, than for any other purpose. My rule is to plow only three years without seeding with clover. After breaking a piece of sod, I raise two crops of corn and one of small grain, seeding the latter with clover. Then three crops of clover, and plow up again for corn, thus alternating every three years. Land needs

rest from the plow at least one-half of the time, in order to preserve its vitality, and

CLOVER IS THE BEST FERTILIZING RENOVATOR

that it can have during that time; it is head and shoulders above any thing else. Clover gives the soil additional life and vigor, preparing it to put forth all its strength in the production of corn, or any other grain. When clover is intended for hay it should be cut early in the season. The after crop should never be taken from the land, but when the seed is matured it may be used for grazing purposes, keeping the stock continually on the ground. This will re-seed the land, which is necessary every three years if it be a biennial plant.

CLOVER SHOULD NOT BE GRAZED TOO CLOSELY IN THE FALL,

as it is tender, and needs protection against excessive frost. I have derived great benefit and even saved the life of my young clover, by giving it a top dressing of straw, or barnyard manure, or compost in the Fall, or any time before the ground freezes. With such treatment the following year's crop has doubly paid the cost.

In localities where the land is well covered with snow during the Winter and early Spring, such a course is not absolutely necessary, but always advisable.

THE GREAT VALUE OF CLOVER

is not more than half realized in the crop itself, but it enriches and invigorates the soil, securing the production of excellent crops of corn or other cereals after it.

The roots are large, permeating the soil frequently to the depth of eighteen inches, holding it in a loose, arable, and proper condition to respond most generously to the intelligent and energetic treatment of the husbandman. Of the different kinds of clover in use, I find the largest is the best fertilizer, while the smaller or medium grades are perhaps better for hay.

ENEMIES.

Clover has many enemies to contend with. Excessive

drought and freezing are injurious, and often fatal to the young, and even the matured plant.

CLOVER SEED.

One of the greatest difficulties in securing a good seeding of clover is that large amounts of poor seed have been thrown upon the market. A seed has which been injured by dampness in the stack before threshing, causing it to sprout, and often to ferment; such seed, when sold to farmers, must, of course, result in a failure.

Every farmer should know that his seed is good, and the surest way of knowing is to secure it himself from his second crop, in proper time, and with great care; and he should see that it is properly cured and kept dry until threshed and used. Clover seed kept through the Summer in bulk, even in moderate quantities, unless it be very dry, is liable to heat, which will destroy its germinating power.

SOWING CLOVER SEED.

I usually sow it with timothy seed, — about four quarts of the former, and six of the latter, to an acre.

If the clover takes well, it will crowd out most of the timothy; if the clover fails I have thus a chance for a crop of timothy.

FERTILIZERS.

Farmers have so many different departments and interests to look after, that many are very liable to neglect the renovation of their soil, a neglect that is fatal to ultimate success. As vegetation in its many forms, and in decomposition, is about the only available fertilizer in this country, it is of the utmost importance, that every thing of the kind be utilized to the very best advantage.

TOP DRESSING.

Top dressing with barn yard manure and all other forms of vegetable matter, where meadow and pasture lands are designed ultimately for cereal products, is the best disposition that can be made of them; and the more decomposition that goes on

after the fertilizer is spread upon the ground, the greater is the benefit; hence, I clean out my yards early in Spring and Fall.

Earth, air, and water contain, in great abundance, all the ingredients necessary for all kinds of vegetable production, and the greatest work of the scientist and the practitioner is to aid the operation of nature in placing those elements in proper proportion and condition, for plant appropriation. So, whatever ingredient is extracted from the soil by cropping, must be restored in some way, or, ultimately, total depletion will ensue.

ADAPTATION.

Every farmer should study the quality, capacity, and adaptability of his soil, by analysis or experiment, and then pursue that branch of husbandry, as nearly as practicable, for which nature has fitted his land. Every good crop enriches the farmer, while every poor one impoverishes him. Hence, one good crop is worth more than a thousand poor ones. It is well to allow land to lie in clover three years out of every four, if that is necessary to secure a good crop of grain the fourth year. With proper care and culture, on lands properly adapted, and in ordinarily favorable seasons, we might as well average seventy-five bushels of corn or of oats, thirty of wheat, fifty of barley, etc., which are not extravagant estimates, as to get less than half those amounts, as do many of our farmers.

HIGHEST AIM UPON THE FARM.

The products of the farm, as a rule, should always be used at home. Every bushel of grain, ton of hay, or straw, sold from the farm, fails to pay its indebtedness to the soil which produced it, and in a few years, without other sources of supply, that soil will not respond to the labors of the farmer.

I very seldom dispose of my grain or hay, but my annual sales are all in the shape of pork, beef, mutton, wool, and dairy products. Usually I produce from twenty to thirty thousand

pounds of pork, from ten to twenty thousand pounds of beef, both live weight, the products of an average flock of two hundred sheep, and a dairy of about sixteen cows.

HOGS.

The best grade of hogs I ever raised, is a cross of the Poland China and the Berkshire. I regard them as the best feeders and shippers, and the best in the market. With my herd of sows, I use the full blood Poland and Berkshire sires, selected alternately with much care from remote herds and showing indications of perfect health.

The Berkshire is noted for its muscle, endurance, compactness, and strength, while the Polands give the size, the fat, and the quiet habits, with very uniform results.

For the last twelve years, I have pursued this system invariably, and while the cholera has raged fearfully all around me, decimating, and even destroying many herds,— one of which was my nearest neighbor's, and within forty rods of my own hog barn,— I have not lost a hog nor pig with any disease, nor has disease appeared upon my farm in any shape.

The hog house is so arranged that I give each brood sow a separate stall at least a week before her time, and at the age of three or four weeks her family is turned into a clover field with ample shelter to protect it from storms or cold. My hog house is large enough to accommodate the feeding of seventy-five full grown hogs, with warm, dry quarters for sleeping, and pure fresh water, accessible at all times.

THE FEED.

The offal from the dairy and kitchen, with corn and oatmeal, are my principal feed for growing the pig. A good clover pasture I regard as indispensable for shoats and older hogs during that period of their lives when bone and muscle are required. Oats, and perhaps some corn or other grain, are also necessary for this purpose. But for fattening and preparing the animal for market, I believe that corn has no equal. I have secured the best results by feeding it in the meal well

cooked. During the early and middle stages of a hog's life, I think corn alone is too strong and heating for his growth or health.

CLEANLINESS.

I attribute much of the hog disease to the general practice of feeding nothing but corn, and much more to the lack of attention to the shelter and comfort of the animal. The hog is a filthy animal if you force him to be such. He is also clean if you make him so. Good food, clean, warm quarters, and pure water for drink, are essential to his health, growth and early maturity.

SHEEP.

My present flock consists of the fine wools well graded up with Leicester blood, giving me the best grade of wool and mutton for market. In the Fall I select all the wethers above three, and all the ewes above four years old, for feeding. I feed them oats for about three months, then corn, until the middle of May, or perhaps later. I then take off the fleece and sell the sheep for mutton. This keeps my flock young, vigorous, and in the best wool producing time of life, as the quality and quantity of wool begin to deteriorate after about the fourth year of a sheep's age. Sheep require dry land, warm and dry quarters, and good protection from the storms at all seasons of the year. Clover hay with a little grain, or oat straw, cut early, well cured and not threshed, makes excellent Winter feed for them. My sheep fold is the stone basement of my barn.

STOCK.

In regard to stock, there are as many different opinions as to qualities, as there are different breeds of cattle. Were I selecting for butter alone, I would prefer the Jerseys; for beef, the Durhams; while I regard with much favor the Devons, the Holsteins, and the Herefords. My present herd of cattle is common stock well graded up with the Short-Horns. They make fair milkers and very good feeders, perhaps not the

very best of either, but, as it is impossible to combine the two extremes in any one breed, and as I am doing about equal amounts of business in butter and beef, I am inclined to think that it would hardly pay me to change, except perhaps to increase the Short-Horn blood.

FEEDING STABLE.

I have a stone basement stable for my cows, that never freezes except in extreme cold weather. It is well ventilated and dry. My feeding cattle are kept in a yard, with dry, warm sheds, open to the south, in which the hay is fed. I feed the corn in boxes outside, which are continually accessible, and they have also plenty of pure water.

DAIRY.

For butter making, I have the modern improvements of a creamery attached to the north end of my dwelling house, with a water tank twenty inches deep for setting milk, through which I can pass a continuous current of cold water for deep setting in cans. Not having any living water on my farm, I was obliged to procure it by artificial means. I succeeded in getting an abundance of water, at a depth of ninety feet, on an elevation of ground near my buildings.

WATER.

I raise the water by wind power, into a reservoir, built of stone, and covered with earth, below the reach of frost, with a capacity of six hundred barrels. From this, by means of pipes, the water is conducted into my house, creamery, barn, hog-house, yard, and two pasture fields, all of which, except the two pasture fields, are secured from frost. The troughs in the barn and yard are also built of stone, impervious to frost, and self-regulating, by means of a float valve. This arrangement is ample to supply all the water needed on the farm, and my fences are so arranged that the stock from every field can have easy access to it. This water arrangement cost me between ten and twelve hundred dollars.

BUILDINGS.

My carriage and scale house, granary, and hog house, are all in the same building. The main building is thirty-two by eighty-eight feet, with fourteen feet posts, and appropriated as follows: Twenty feet of its length, on the east end, contains my scales, for all purposes of weighing, and my carriages. The scaffolding or second floor of this department is finished off into a wool room eight by twenty feet, on one side of the driveway, and a storage room twelve by twenty feet, for seeds and finer articles, on the other side. The next thirty-two feet of the length of said building is devoted exclusively to storing the different kinds of grain, while the remaining thirty-six feet, with arrangements attached for sleeping purposes, constitute my hog-house. The scaffold, or second floor in the hog-house is used for storing corn for feeding purposes. A driveway runs through the center of the entire building. My feeding floor, thirty-two by thirty-six feet, can be all used for this purpose, or by means of movable partitions, I can form a driveway, eight feet wide, through the center, and any number of small pens, for single hogs, that may be desired, on either side. My wind power will carry the water into any part of this building where I may desire it.

E. J. JEFFRESS,

MARINE, MADISON COUNTY.

Breed Nothing but the Very Best Stock Horses and Sheep — Pastures and Hay — Poultry — Self Feed Rack — Hay Shed — Hennery.

STOCK.

The subject of improvement in stock with very many farmers, if we may judge by their actions, is a matter entirely unworthy their thought. They patronize a cheap horse, simply because the terms of service are cheap; get a cheap colt, which grows up into a cheap horse, and, except his keeping, always remains cheap. Things of small cost, usually, prove to be of small value. There is such a diversity of opinion relative to the most valuable stock of horses, that I hesitate somewhat in expressing myself, lest I oppose the views of some who are considered standard authority. For general farm purposes, I would not select the Norman, nor the fine-boned racer as the coming horse, but a clean-limbed, well-formed animal of about one thousand or one thousand two hundred pounds, that can take a buggy, without injury to himself, twelve miles per hour. The St. Lawrence, Addison, and Hambletonian, are horses of this type. What I have said in relation to the raising of horses, applies with the same force to the raising of cattle, sheep, and hogs. The cow that will give two gallons of milk per day, bring a calf worth five dollars, and at last surrender up a carcass of nine hundred pounds, gross weight, is to some entirely satisfactory, though a very expensive animal. The farmer may say, "I am unable to purchase the best class of stock, but must content myself with such as I can get." To a certain extent this may be true, but as his highest interest demands the procurement of blooded animals, he should never allow his ambition to slacken until

he has attained this end. In selling, let the inferior go, not the best. In breeding, if necessary, go several miles to obtain the services of a valuable male. Pursue this course for a few years, and the change will be a matter of astonishment.

SHEEP.

With sheep, the most marked and satisfactory results can be obtained by pursuing the course that I have very briefly indicated. Purchase or hire a thorough-bred buck,—I would advise Cotswold,—and with him turn your best ewes. From the issue keep the best lambs, and, when they are one year old past, breed them to a different buck of the same stock. Follow this system a few years, and you will have a flock of sheep of

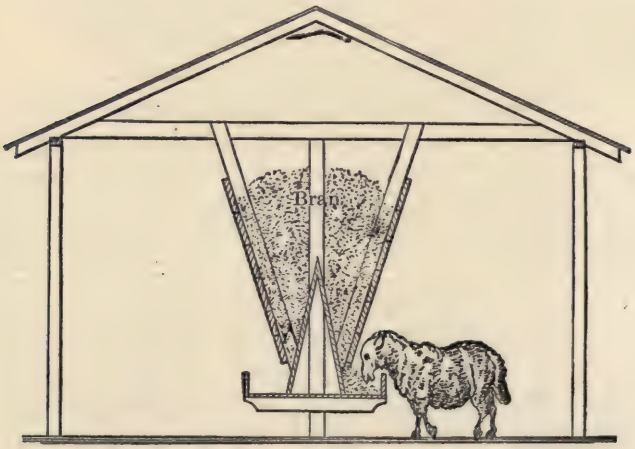


FIGURE NO. 1.—"SELF FEEDER."

which you may feel proud anywhere. Sheep properly treated, are provided with good shelter, partitioned so that ewes with young lambs may be put by themselves. After remaining shut up a few hours, the lambs having sucked, they may be removed, with the ewe, giving place for others. Lambs will eat bran and ground feed when only a few weeks old, and should have access to food, that they may get it when prompted by their

appetites. For this purpose I know of no structure better adapted to both old sheep and lambs, than an arrangement I am using, called the "Self Feeder," and represented by figure 1. The ground feed is put into the box, which is covered securely, and is divided into either trough by two boards nailed together thus ∧. The feed runs down gradually into the troughs, never filling them, but always enough. The feeder I am using is not so expensive as the one shown in the diagram. Mine is simply the bran box covered, without the shed, and is about sixteen feet in length. Any one at all acquainted with the use of tools, can make one in a few hours.

SEEDS FOR A PASTURE.

Three years ago I made a new pasture, and selected the following variety of seeds: Blue grass, red top, red clover, timothy, and orchard grass, sown in about equal quantities. The orchard grass starts very early, and grows more rapidly than other grasses, which for early grazing makes it valuable. For drouth, the red top has no equal. The other varieties are too well known to require a word of comment. And with reference to the combination, I would say try it and you will be pleased.

HAY.

There is at the present time a mania among farmers for wheat raising. They have sown again all their stubble land of the previous year. More wheat has been sown upon corn land than ever was known before, and meadows have been broken up until there is not hay enough in the country to supply the home demand. Hay in the small adjacent towns has been selling for twenty dollars per ton. This is much better than wheat. I have broken up no meadow, but will give it greater care. I will, in the early Spring, give it a thorough harrowing, which improves a closely sodded meadow wonderfully. I do not stack out of doors, believing the waste by so doing will pay for a suitable building, in which hay will be secure, in two or three years. Figure 2 represents my hay shed. There

is a passage wide and high enough between the posts for a load of hay, which is taken from the wagon by horse power. This shed cost about one hundred dollars, and I would not be without it for twice the amount. In the first division of the building, at the east end, I have my scales, upon which all produce is weighed before sent to market.

POULTRY.

I have the light Brahmas and buff Cochins. There may be better fowls, but these are good layers, having large bodies. I have a plan of a hen house, which I claim as original, and take pleasure in giving a drawing of the same for the readers of THE MODEL FARMS. Figure 3 represents the building.

Nest pockets are attached upon the outside, under tight-fitting weather strips, by hooks to the wall. These pockets can be easily removed and cleaned. One hen can not interfere with another, either in laying or incubating.

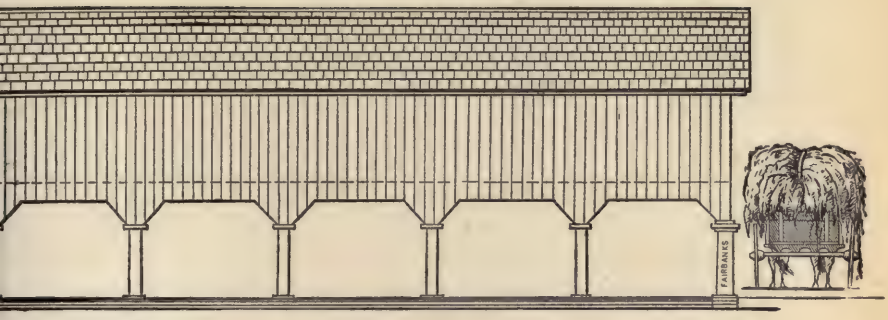


FIGURE 2.—A CHEAP HAY SHED.

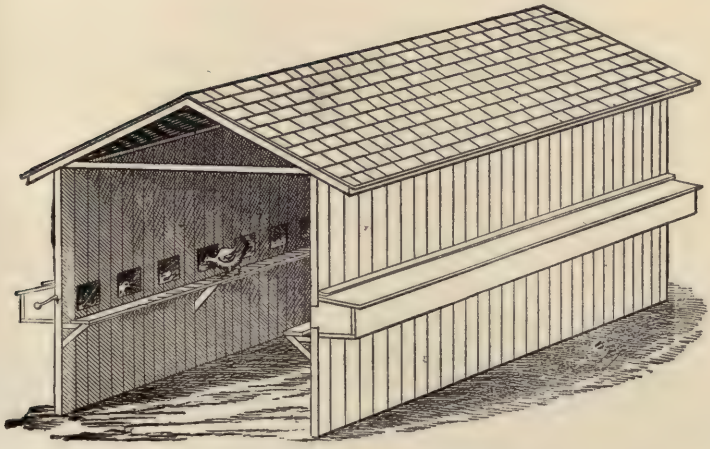


FIGURE 3.—HEN HOUSE.

ELI EDDEMAN,

DONGOLA, UNION COUNTY.

Successful Winter Wheat Farming in "Egypt"—A Country Well Adapted for Horticulture.

I sow about seventy-five acres of wheat every year, and I usually thresh out 1,500 bushels of No. 1 wheat. I put the wheat in with a Superior drill, and cut it with a Champion reaper. As soon as the wheat is dry enough, I thresh it and put it on the first market. I plant thirty acres in corn every year, and the yield is nearly forty-five bushels to the acre. This is mostly fed to hogs and other stock. The hogs, after being well fattened, are generally sold to packers and a handsome profit realized on the corn.

My selection of wheat land is always from my clover and stubble fields, which land I break in July and August, and again re-break in September; then thoroughly harrow the ground before putting the seed in.

HOGS.

I raised for a long time the Poland China hogs, but for the last few years I am breeding the Berkshires, and they pay me better than the Poland Chinas.

SHORT HORN CATTLE.

My stock of cattle are the Short Horns, and my experience in milch kine and beef cattle gives the Short Horn the preference. For storage for hay, grain, and the shelter and protection of stock, I have a two-story barn, 44x36 feet, well shedded on all sides, so that none of the stock need be exposed to the weather. Twelve acres are usually sown in oats and the oats fed to stock.

I redeem fields that are becoming impoverished by seeding to clover. When the clover has fully matured I use the rolling cutter and plow in the field, turning the whole crop under, then seed to wheat, always with good results. After the wheat comes off and another crop of clover comes on, it is again plowed under and the land sown in wheat. By seeding for three consecutive years, the land is as good as before it was broken.

A TRUCK PATCH.

I have an apple orchard of 300 trees, all well selected, a large majority of which are Summer fruits, and from which I receive quite a good income. A part of the apples are used for making cider, and a portion stowed in the cellar every year for home consumption. The expenses of the whole farm are cleared every year on what, in "Egypt," is called a "truck patch," which consists of a few acres cultivated in sweet potatoes, Irish potatoes, and the Multiplier onion.

My house is a wooden structure, 18x36 feet, built on the L style, situated on a beautiful table-land near the forest, and is surrounded by a beautiful grove of deciduous and evergreen trees, making it a most desirable home. My whole farm is ridge-land; not an acre of bottom on it. The growth of timber is white oak, hickory, yellow poplar, walnut, and gray ash. The undergrowth is principally pawpaw, red-bud, and dog-wood, all indicating the best of soil.

"EGYPT'S" RESOURCES.

Twenty-five years ago I began on a forty-acre lot in the woods of this place. There was a little log cabin on it then, which I moved into, and went to work clearing off the heavy timber preparatory to making a support for myself and wife. By perseverance and good management I have been enabled to buy an adjoining forty-acre lot, and so kept on in the good work of buying forty-acre lots until my farm now contains 300 acres, which is seven and a half times what it was when I commenced. At that time I owned no other land than the forty acres, and it unimproved, had one horse and a plow, a

chopping axe, grubbing hoe, and maul and wedge. I began low down in "Egypt," where thousands of our countrymen who live at a distance think it impossible for a man to keep the wolf from the door. This is a delusion, which, ere long, must, and will be dispelled. There are but few places so favorably situated. The Ohio River just a little on one side of us, the Mississippi just a little on the other side, and three railroads just between, terminating at Cairo, twenty-seven miles south, our position for marketing facilities is indeed to be envied. The lands are all well adapted to agricultural purposes, and for horticulture can not be excelled. While thousands of good homes can be had on easy enough terms now, such will not be the case long. "Egypt's" resources are getting noised abroad; so much so, that before another decade it will take thousands of dollars to buy a home that might now be bought for hundreds.

I have been blessed with a family of sons, who, as soon as they attained to years of maturity, relieved me from hiring any help, except an occasional hand a few months, so that it would be nearly correct, so far as hired help is concerned, to say that my expenses have been nothing. Through a series of about twenty-four years of good farming, and clearing of my land at the same time, I have now a very comfortable home and am provided against future want. I am fifty years old, and beside the farm, I own a large dry-goods and general merchandise establishment, the result of careful, prudent farming.

DAVID C. GRAHAM,

CAMERON, WARREN COUNTY.

Thirty-six Gates on the Farm None too Many—Clover and Timothy the Best Adapted to our Prairies—Best Time to Cut It—Treatment of Pasture and Meadow Land.

MY FARM

adjoins the village of Cameron on the east and south, and contains 220 acres of rich prairie soil, divided into fields and fenced with hedge and rail fences. Eighty acres of the farm were purchased in 1857, at $30 per acre; the remainder since, at $50 and $75 per acre. There are on the farm thirty-six gates (none to many), thirty of them the Teel pattern, the remainder hinge gates. The farm is conducted as follows: one hundred acres in pasture; thirty acres in meadow; ten acres in oats; seventy-five acres of corn; five acres of orchard and feed lots. The ten acres of oats are seeded down every Spring with clover and timothy seed; one peck of the former and four to five pounds of the latter to every acre, and in case of a failure from any cause, the seeding is continued until a sufficient stand is made to exclude the weeds. I consider timothy and clover the best adapted to our prairie soil, and no other soil that I ever read of can equal the prairies of this State for these grasses. What we sow, the same kind we mow. Timber, or other soils, usually have a tendency, by nature, to produce wild grasses, not in harmony with the vigorous growth of the clover and timothy. Experience of twenty-two years demonstrates that these statements are correct.

EVERY YEAR

about ten acres of the pasture land are broken up for corn, and ten acres of the first seeding of the meadow let out for pasture, so that the same number of acres for pasture, meadow, and corn, are available every year, thus virtually keeping the farm

in a good state of cultivation, without the tedious process of manuring. The pasture is generally fed close, yet it affords an abundance of feed. The grass on the thirty acres of meadow is usually cut at the proper time, not at either of the two extremes in vogue in regard to early and late mowing.

THE PROPER TIME TO CUT CLOVER AND TIMOTHY

(at least for me) is when it matures, but not so as to destroy its nutritious elements by permitting it to remain uncut until the seed is so ripe that it will drop off in handling, while in the process of putting it away for future use. The hay secured from the above thirty acres is usually put under cover, and about the 1st of September stock are turned on the aftergrass and generally fed close. This is the treatment my pasture and meadow lands receive.

In growing a corn crop, the most important elements for success are rich soil and proper culture. These can be had by seeding down in the above grasses, and in plowing a portion of the sod land every year for corn. After the corn is planted, harrowing, rolling, and continual plowing gives an abundant yield. This is my mode of raising corn, and the result is satisfactory.

HIGH GRADE DURHAMS.

There are usually kept on the farm from forty to fifty head of high grade Durham cattle, of different ages. Of this number, one car-load of steers are fed for market every year, and sold during the months of December or January. From calves they are well cared for, and about the first of September, after they are two years old, they are selected and fed grain until they are fat (which usually takes about three or four months), and then shipped to Chicago. This is the only system of feeding, of late, that I can find any profit in.

COWS SOLD ON WARRANTY.

Three or four cows are sold every year on a warranty; that is, if not satisfactory in every particular, to be returned within four days from the day of sale. The well developed heifers three years old, with their first calf, are handled with

care, and take the place of those sold, while those that are not of that class are sold to the butcher. The amount of butter sold each year, besides the family use, is about 500 pounds.

POLAND CHINA HOGS.

There are usually raised on the place from 100 to 125 head of hogs, of the Poland China breed. When the young pigs begin to eat, they are well fed on corn only, and at three months old are weaned; the sows are then put up to fatten, and as soon as fit for market disposed of, while the young pigs, having a full range of pasture, and corn, are growing rapidly, so that by the 1st of January they usually average upwards of 200 pounds per head. The 1st of January the choicest sows are selected, a boar put with them, and they remain together six weeks only. The boar is castrated, and the breeding is at an end for the year. This process usually gives the number of pigs required, and only six weeks difference between the oldest and youngest pigs. By the time the young pigs are ready to eat corn, the previous crop of pigs are usually sold off, except the sows that have raised the pigs. This has been my method of hog-raising for more than twenty years, and I know not of an instance when I bred a sow the second time, although, I will admit, that old sows breed a more vigorous progeny. With this system of breeding, I am no more liable to disease with my young sows than I am with the pigs from full developed sows, in proof of which I have not had a case of cholera among my swine.

ROBERT MILNE,

LOCKPORT, WILL COUNTY.

Durham Cattle—Poland China Hogs—Tile Drainage—A Blessing to the whole State.

KELVIN GROVE

is situated in the town of Lockport, County of Will, and State of Illinois, and consists of two hundred and forty acres. It is divided into nine divisions, viz.: eighty acres adjoining the Town of Lockport, which is partially covered with timber, and is in permanent pasture, except what is occupied by the house, barns, lawns, and orchard. This pasture, about sixty-five acres, is well seeded in blue grass and has been used for grazing since 1853, when it came into my possession. The rest of the farm, one hundred and sixty acres, is divided into eight fields of twenty acres each, one of which, in connection with the above pasture lot, remains permanently in grass, making the pasture on the farm one hundred and five acres.

The seven fields of twenty acres each are cultivated every year in the following manner: 80 acres in corn, 20 acres small grain, and 40 acres meadow.

FOLLOWING A ROTATION OF SEVEN "SHIFTS,"

when all the manure which has been made on the farm during the year has been spread, one field of meadow is broken up and planted with corn the following Spring. One field is seeded down with grass with the small grain. I manure with bone-dust one of the fields in corn, using 300 pounds per acre. This rotation, it will be seen, gives four continuous crops of corn on each field, but is manured twice during that course, the meadows only remaining in grass two years. This plan has proven satisfactory, the farm continuing to improve in fertility.

The stock upon the farm consists of from forty to fifty

head of select Durham cattle, the breeding of which has been a specialty on the farm for the last twenty-five years, commencing in 1854 with selections from the best herds in Kentucky, and latterly by importations at different times from one of the choicest herds in Scotland. Viscount (18507) was imported by me in 1873 and stood at the head of my herd for five years. He is now owned by Verry Aldrich of Tiskilwa, Bureau County, Ill., and heads a very valuable herd of Short Horns. My herd has been kept entirely for breeding purposes, consequently I have had but few fat cattle to sell, the produce being disposed of readily as breeders, the prices of which have varied with the times, but generally have paid a reasonable profit, at least more than the common stock of the country. If the best will not pay, it is evident that the poorest will not. My investment in blooded stock has been very large, but in this I have nothing to regret and would take the same course were I to begin again. My herd is all comfortably housed during the winter.

THREE SPAN OF HORSES,

a few brood mares and colts, twelve or fourteen in all, in addition to a carriage horse, compose the working power of the farm. Besides the home farm, I own other farming lands, which are cultivated with the same force of horses. The Clydesdale or Norman Stud crossed with our common mares, I regard as producing the best class of horses for use on the farm, the former rather preferred.

HOGS FORM AN IMPORTANT

factor in the profits of my farm. I try to keep the breed that will produce the

MOST PORK AT THE LEAST EXPENSE.

I breed the pure Poland China, of which I keep about ten sows and their annual produce of fifty or sixty pigs, which by proper care and feeding can be made to weigh three hundred pounds at nine months old. This I regard as the most profitable way of making pork. I only raise one litter a year, and feed corn, oats, bran and milk while young, with a clover past-

ure to run on in Summer, where the pigs have access to pure spring water. With such treatment I have escaped disease.

COST OF PRODUCTION.

Without particularizing, I would say that I use on the farm all the modern improved agricultural tools. I find this investment a very heavy item of expense. My system being mixed husbandry, where the produce is nearly all consumed on the farm, it is difficult to give an estimate of the cost of production, but, would give it as my opinion that less than forty cents per bushel for corn, and four dollars a hundred for pork, is an unprofitable business to those who have to hire the labor to produce it.

HAY.

My hay is cut from forty acres of meadow. It consists of timothy and clover, and is cut and cured as follows: The grass is cut one day with a mower, and by the use of the American hay tedder is invariably put into the barn the next, unless prevented by unfavorable weather. Hay cut and cured in this manner retains its color and nutritious qualities, which is a very important item to those who consume it upon the farm. I would estimate the value of hay thus cured at twice that which is exposed to the sun for several days before it is put in the mow.

DRAINAGE.

Were I asked to name the first and most important improvement to be made on a new farm, I would say thorough drainage, as both labor and manure are nearly lost on wet, undrained land. Not only are the wet spots a dead loss, but their influence is a decided injury for a considerable area around them. No expenditure will pay the farmer better than the draining of every slough and low place upon his farm, if judiciously and properly done. Ditching and tile draining is a business of itself. It requires judgment and experience to understand the amount of fall, the size of tile necessary to take the water from a low spot in time to save the crop during heavy freshets. The writer has had considerable experience in draining both

here and in his native country, and would advise those who are not thoroughly acquainted with the business to employ a professional drainer rather than risk a failure. The cost of tile varies according to the proximity to tile works. The expense of digging the drain I should estimate at from 12 to 16 cents a rod, according to the nature of the subsoil. No drain should be less than three feet deep, when the fall will permit of it. A general system of drainage throughout the State of Illinois would not only be a great benefit to the agricultural interest, but it would modify the climate so as to be a blessing to the whole community.

GEORGE CAREY,

ROCHELLE, OGLE COUNTY.

A Sheep Farm—How to Make a Good Flock of Sheep—High Grade Merino Ewes—Full Blooded Long Wool Rams the Best Sheep for Mutton and Wool—Plan for Feeding Rack.

SHEEP FOR MUTTON AND WOOL.

Sheep to be profitable, east of the Mississippi, should be sufficiently large and well proportioned to sell readily for export to Europe. They should shear, at least, six pounds of washed wool. They should be sufficiently hardy to flourish in flocks of several hundred. They should have such a disposition to fatten that the ewes, when not suckling lambs, will be suitable for mutton, and the wethers never poor on reasonable feed. I know of no distinct breed that possesses all of these good qualities.

LONG WOOL SHEEP.

Leicester, Lincoln, and Cotswold are each large and well proportioned sheep, and shear large fleeces of wool, but their very long wool is not the most salable, and in this climate is liable to become so matted that it will not comb and can then only be sold at a low price. It is also true that these long wool

sheep are not very hardy with us, and will do well only in small flocks.

SOUTH DOWNS AND MERINOS.

South Down sheep are hardy and prolific, and make the best of mutton, but they are rather small and shear the least of any improved breed. Merinos are the most hardy and will thrive better in larger flocks than any other breed, but they are not very prolific, and do not amount to much as mutton sheep.

THE RAM SHOULD BE WELL BRED.

I have had some experience with each of these breeds, and with sheep crossed and mixed in almost every conceivable way, and this would be my advice to a beginner: buy a uniform flock of high grade Merino ewes; then get a good full-blooded long-wool ram, either Leicester, Lincoln or Cotswold. I should prefer a Leicester, because they fatten the most readily, and are not quite so high priced as the other long wools; then the Leicester head is somewhat smaller than the Lincoln or Cotswold, so that small ewes are less likely to have trouble in lambing. Of this there is very little danger, however, if the ram is well bred. It is the mongrel male that makes trouble of this kind, for the get of highly bred animals is always small at birth. This is why it is safe to breed the large Percheron-Norman to our common mares. For farther proof of this proposition, compare the head and neck of the mongrel bull with that of the highly bred Short Horn or Devon, or the head and neck of the thoroughbred horse with that of the mongrel stallion.

THIS FIRST CROSS OF MERINOS

and long wool sheep will give you the highest priced wool, and increase the size of your sheep without diminishing the weight of wool per fleece. Though the weight of wool will not be so great in proportion to the weight of carcase.

I would continue to use long wool rams until the wool gets to be six to eight inches long. I would then use a South Down ram, which would shorten and thicken the wool, and

improve the quality of the mutton. After making one cross with the South Down, I would return to the long wool rams and proceed as before. In this way we get the most desirable wool and mutton sheep for this climate without great expense.

Below is a drawing of an excellent rack for feeding sheep. It consists of a box 16 feet long, 2½ feet wide, and 8 inches deep. At the top of this box on each side is a rack, like a ladder lying on its edge, which may be opened to receive the hay, and closed while the sheep are feeding. The rounds of the ladder should be far enough apart to allow the sheep's head to pass through, and close enough together to keep the hay in. Fig. 1 shows the rack open to receive the hay. Fig. 2 shows the same closed. A post on each side of the rack keeps it from opening too far. Sheep will waste less hay and get less of it into the wool of their necks with this rack than with any I know of.

PLAN OF AN EXCELLENT RACK FOR FEEDING SHEEP.

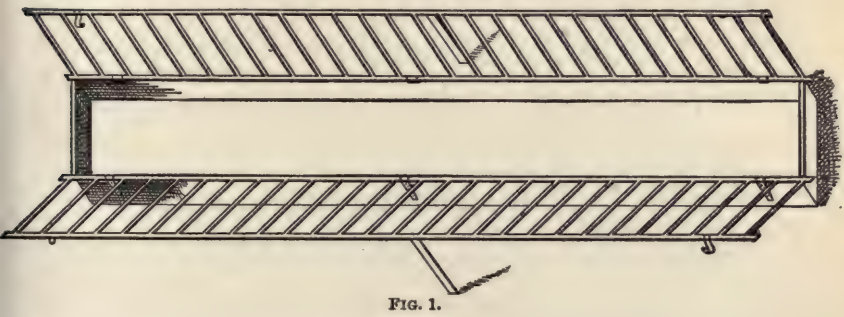


FIG. 1.

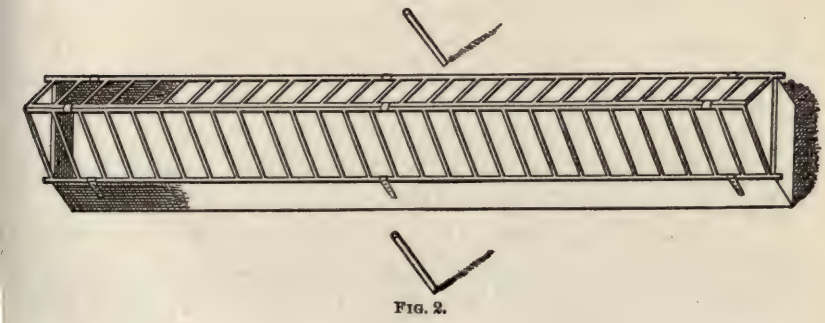


FIG. 2.

N. C. GILBERT,

GENESEO, HENRY COUNTY.

No Field under Cultivation More than Five Years—Fifty Bushels of Corn and Two Tons of Hay per Acre—"Movable Self-Feeder" for Stock—Merino Sheep—Tile Drainage.

My farm consists of about two hundred and forty acres. It is high, rolling prairie land, and each field is adapted to the growing of grain, pasturage and meadow. Corn and grass are the principal products raised, and are mostly converted into pork, beef, mutton and wool on the farm.

Whenever a field is sown with small grain, it is also sown with clover and timothy seed. It is intended not to keep a field under the plow more than five years before seeding. All fine manure made on the farm, is scattered on meadows and pastures, and the coarser portion is put on fields intended for corn. By this method over fifty bushels of corn per acre is raised, and not less than two tons per acre of hay.

NORMAN HORSES

are taking the lead for general farm use, in this section.

GRADE SHORT HORN CATTLE

are considered best for beef and milk. Many farmers are of opinion that steers fed with corn while running on pasture are much more profitable than those fed through the long cold months of Winter and Spring. For convenience in feeding in the field,

A MOVABLE "SELF FEEDER"

is constructed, that will hold enough shelled corn to supply a car load of steers for a month, thus obviating the necessity of hitching up a team for feeding them daily, or of carrying corn

in a basket. This bin, having a good roof over it, will keep the corn in as good condition as though in a granary or crib.

COTSWOLD AND MERINO SHEEP.

Where flocks of sheep, of one hundred or less, are kept, the Cotswold is undoubtedly the best. I keep a flock of four hundred Merino sheep, and consider that they pay me well, in both wool and mutton, and also in keeping up the fertility of the farm. The ewes should be bred, so as to have the lambs come in April, while the sheep are still in their winter quarters, as it is much less trouble to give them the attention required at that time, than when they are roaming about the fields. Lambs should be weaned the first of September and allowed a ration of grain daily, until the grass has well started the next May. Good Merino lambs will shear ten lbs. per head at a little past one year old; and after they are sheared, weigh from eighty to one hundred pounds and be ready for the butcher. My practice is to shear the latter part of April, without washing. A good shelter is necessary to the successful raising of sheep; as they should not be allowed to get wet from the first of November until the warm rains of Spring.

THE OUTBUILDINGS

on my farm are a barn, fifty by eighty-four feet, with a basement for stabling horses, cattle and sheep; a hog house, thirty by forty feet, with scale house attached, and two double cribs, each forty feet in length.

A convenient size for cribs, is a building twenty-six by forty feet, with twelve feet posts. This gives two cribs eight feet wide, and a driveway of ten feet, and will hold three thousand bushels of corn.

TILE DRAINAGE.

Too much can not be said with regard to the advantages of tile drainage. My experience in laying tile reaches back for a period of nine years. Have laid more or less nearly every year since, until nearly all the ravines in my farm produce a

crop as well in a wet season as in a dry. Another advantage in tile drainage, besides the increase in the production of crops, is the convenience with which a field can be cultivated. In these days of sulky plows, check rowers and two horse cultivators, much time is saved in being able to go the full length of the field at every turning. In fact, where a wet ravine runs diagonally across a field, I consider that *a tile drain will well pay, in two years, all expenses of construction.* I have used tile varying in size from three to six inches. The three and four inch sizes are mostly used in this region. Where the fall and outlet are sufficient, the tile should be placed about three feet below the surface. The cost of putting in a four inch drain, including price of tile at factory, is about fifty cents a rod, varying according to condition of soil and manner of doing the work.

Land in this part of the country is worth from fifty to seventy-five dollars per acre. We are near markets, and are well supplied with schools and teachers. The climate is healthy, the land high and dry, and we are pretty sure of a fair crop every season. In my opinion, but very little better farming country can be found elsewhere, or one occupied by a more intelligent and enterprising class of citizens.

JAMES ANDERSON AND HENRY K. SMITH,

MAGNOLIA, PUTNAM COUNTY.

Hog Farm and Hog House—Never Had Hog Cholera—Why? Soap Suds are Freely Used in Swill—Clover and Oats both Valuable and Superior Feed—Much Pleased with Artichokes—Plan for a Hog House.

JAMES ANDERSON'S FARM.

My farm is of eighty acres, situated in Magnolia, Putnam County, and is essentially a hog farm. I turn off annually about sixty head of fat hogs, averaging about 450 pounds. This year they will average 447 pounds. I raise about all the grain my hogs eat, on my own farm. My rye and oats are generally sold. I have never had any hog cholera, and attribute my freedom from this disease to always putting the soap suds with the slop on wash days. I always aim to have a heavy, even lot of hogs, and always market them myself.

THE FARM IS WELL UNDER-DRAINED.

The peculiar feature of my farm as to many others in this county is that it is well under-drained with 250 rods of tile and open ditches. There is not a foot of land not in use. I raise uniformly good crops, good hogs, and I am making money. I came on the farm ten years ago, and found it in bad condition, with no improvements worth mentioning, and a poor crop the year previous. I paid cash down for the farm, except $500 and interest which I have paid since. (Paid $37.50 per acre, and consider it now worth $60 per acre.) I have paid out in cash for horses, cattle, breeding hogs and buildings and other improvements (such as fences, tiling, wagons and farming implements), including the $500 on land, the amount of $4,900, besides my living, hired help and taxes. This amount has been made in ten years from the eighty acres, and I now consider the farm is in better condition than ever before. The

income has been $490 per year, besides paying taxes, living of family, and hired help. (I have had no boys of my own to help me.) My farming operations give the following results this year:

12 acres in pastures, 10 acres being in yards and lots.
34 " corn, estimated at 60 bushels per acre.
7 " oats, 449 bushels, machine measure.
8 " rye, 210 " "
4½ " wheat, 97 " "
4¾ " clover, two crops, 14 tons of hay.
1 acre in potatoes, 115 bushels.

On tile drainage I am quite enthusiastic, and advise farmers to put in but little two-inch tile, as I had to take up my two-inch and replace it with three-inch. My motto in farm work is to do *every thing well.*

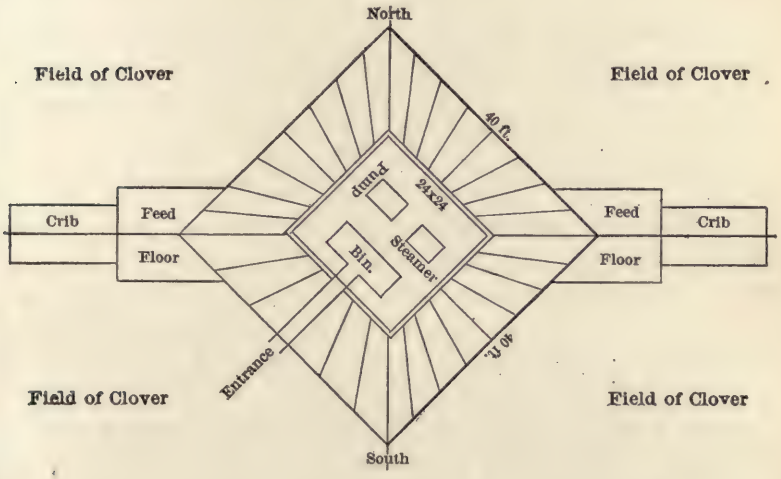
HENRY K. SMITH'S HOG HOUSE.

I am now stocking my own farm of eighty acres with hogs. I am breeding twenty sows now, to come in last of March next. Will sow the whole farm down to clover as soon as possible. I have forty acres in grass and clover now, and will sow twenty acres more in the Spring. My plan is to build a good hog house in the center of the farm, at the junction of four fields, run 200 or 250 pigs on the four fields of clover, with plenty of good slop, until they are about eight months old, and market them. From experiments I believe that twenty acres of clover is as valuable for hog feed as twenty acres of corn. And I am convinced that wintering stock hogs is not profitable, and that a hog, if hurried, is more profitable at eight or nine months than at fifteen or eighteen months. All that a growing pig needs beside good clover is plenty of good slop, made from ground oats with the hulls sifted out and plenty of milk. I believe, with such treatment, a pig at eight months would weigh 300 pounds, which is only a gain of one and one-quarter pounds per day. Of course, to obtain such results, the owner must be with his pigs and attend to them closely. It is evident that something of the kind must be done in order to stop the

great drain upon our soil in the hog-raising regions of the West, for by grazing pigs on clover we get the benefit of the droppings over the fields.

CO-OPERATION IN HOG RAISING.

I can conceive how two neighbors, on adjoining farms, might coöperate in hog raising. One farmer sow to clover, and stock up with hogs enough to eat it; the other farmer raise the grain they would need to feed. In the course of five or six



years change about. Hogs can not be grown without some grain. Use plenty of oats for slopping. Feed some corn to the brood sows during Winter, and perhaps some might be fed profitably for two or three weeks to pigs before going to market. Oats I think a superior feed for hogs, if ground fine, hulls sifted out, and stirred into boiling water. Sweet pumpkins are an excellent feed for hogs, especially brood sows, and are much more easily raised than corn. I am raising artichokes for hogs and am much pleased with them.

I am building a hog house 40x40 at outside. The central portion of it is 24x24, and stands higher, with cement floor, and

sides built of concrete, to make it fire-proof, and contains feed bin, steamer, and well or cistern. There are to be continuous troughs next to the thirty pens for the brood sows. The pens are to be eight feet long and five feet wide at outside, and in the form of shedding, and have a floor made of coal tar, gravel and sand. Also a feed floor of the same material. As to the arrangement of troughs and appliances for slopping, I have not decided, but expect to get some good ideas from "MODEL FARMS."

MARK L. HUGHS,

OLMSTEAD, PULASKI COUNTY.

Winter Wheat Farm—Durham Cattle—Sheep and Hogs.

My homestead farm contains 800 acres of land, in one body. Probably the best farm in Pulaski County. I own 2,200 acres of other land in the same county. The house and buildings are about in the center of the homestead, from which nearly all of the farm can be seen. The land is rolling, with medium rich top-soil and yellow clay for sub-soil. This farm has been cleared for a good many years. The oldest fields are now in clover, and covered with a flock of sheep.

Of the homestead farm, 650 acres are cleared, which at present contains: 335 acres of wheat, 110 clover, 105 corn, 20 timothy, 20 red top, 20 orchard grass.

The remainder of the farm, except barnyard, garden, and several acres around the house, is rented, of which nearly all is in corn. My dwelling is a large, two-story building, of semi-modern style. My orchard is on the west of the house. The barn, which is no doubt the largest in the county, is of one and a half stories, the sides forming horse and cow stalls. Its capacity is about seventy-five tons of hay, 3,000 bushels of corn, twenty horse and twenty cow stalls, with a roadway of thirty feet, extending its full length. The cows are stalled singly, with no room to turn around. They are haltered,

and fed crushed corn and bran, together with pumpkins during the Fall of the year. The horses and mules are fed in long troughs, with hay racks extending the full length of their portion of the barn. I have but three horses; all other working stock being mules of large size.

SHEEP.

The wood-pasture, leading from the barnyard, contains a large artificial pond, which is filled by a brook running from the northern part of the farm. From the barn one enters the sheep house, which is of good size, with a rack extending the full length of the building about ten feet in hight. The building is one and a half stories high, and made so that it can be lengthened at any time. Its capacity, with side sheds, is 400 sheep, without discomfort. I have a flock of 300 head at the present, 200 ewes and 100 wethers, but it is my desire to obtain a flock of 500 ewes, which I consider large enough for a farm of this size, the product of which will be marketed every year, selling the old ewes and breeding from young and pure stock. I breed from two full blooded rams, they being of the Leicester and Lincoln stock, which I think are best for market and are most suited for this part of the State. I cross with the best of common stock of my own selection. In my present flock I have a good many young ewe lambs that are fine specimens of the cross, and a few that resemble the pure Lincoln stock.

SHORT HORNS AND SWINE.

My cattle are the Durham. I have five large cows of three-fourths blooded Durham, with thirteen yearling calves of same blood, mostly heifers, which are of fine size and good shape. In the pasture are seventy head of cattle, all but about twenty head good common steers. They are large and in good order, and will weigh about 1,150 lbs. gross. My stock of hogs consists of 150 head. I use a two-year old Poland China boar, of large size, standing two and a half feet high, and weighing about 190 pounds, he being in thin flesh. Among the brood sows are quite a large number of Berkshires.

The hog pens are floored and have low roofs. The drove is nearly all a cross between the Berkshire and Poland China, all of well formed bodies.

WHEAT.

Under a large shed is stored away agricultural tools unfit for further use, plows and machinery of all kinds. All my implements and machinery are cleaned and painted every Fall and Winter. The wheat granary is a small house by the side of the road, holding about 750 bushels of wheat. I sowed in the Fall of 1879, 335 acres of the Fultz, Slosson, Tennessee Red, Red Sea, and Red May varieties. My present crop was well taken care of, and sold soon after threshing at a good price, having gathered 3,600 bushels from 260 acres, an average of fourteen bushels to the acre. I do my own threshing, and thresh for others also, having threshed 24,000 bushels of wheat for my neighbors, together with large crops of oats.

LABOR.

During the Summer the working stock is fed on corn, oats, and hay. My ground is always plowed deep, harrowed well with common and a disk harrow, and great care is taken how the wheat is sown with the drill. I am in the field all the time and see that things are done right. During seeding time I employ from six to ten men, but five are kept the entire year. One man has the charge of the barn, it being his duty to feed all the stock, see that all are properly bedded and curried, harness the working animals and see that the harness does not bruise or injure them. But four horses are kept, including a buggy horse. The fields of wheat are pastured with sheep all Winter. The sheep are driven to the house every night and fed clover-hay, and kept from the wet weather.

J. H. OAKWOOD,

CATLIN, VERMILLION COUNTY.

Handles Thorough Bred Horses, Short Horns, High Grades Berkshire Hogs and Cotswold Sheep—No Dogs—The Orchard a Sacred Spot—Pole Drains.

My farm contains one hundred and thirty-two acres, eighty acres prairie, twenty acres cleared, thirty-two acres seeded to blue grass. A large stream and two smaller ones furnish unfailing supplies of running water. The drainage consists of a half mile of open ditch, three feet deep and five feet wide at the top, and an equal amount of timbered drain the same depth. These drains make all the land sufficiently dry for cultivation, except in excessively wet seasons. A sufficient amount of tile and mole draining will be put in at an early day to make the drainage complete.

The farm is divided into nine fields; two containing eighteen acres each, one sixteen acres, one fourteen acres, two eight acres each, and one five acres. The orchard, barn lots and door yard five acres.

THE FARM IS FENCED AND SUBDIVIDED

with one and a half miles of osage orange hedge, trimmed once or twice each year, and the balance "Virginia rail fence" —not the most attractive fence to the eye, but having a surplus of timber, the cheapest for me to build, and always good when well made. The farm is so subdivided that all the fields but one have running water, and all but two never failing water.

A fish pond has been recently made by throwing a dam across a ravine near its head, one hundred and fifty feet long by nearly forty feet wide. It is situated one hundred and fifty

yards from the house, and will furnish a good supply of ice made from pure water for Summer use.

BUILDINGS.

The barn is 36x56 feet, outside posts sixteen feet, siding dressed and painted. The barn is divided into stalls for cattle and horses, with sufficient cribs and granaries.

The carriage house and tool house is 16x27 feet, siding 12 feet, undressed and whitewashed.

The hog house is an old building 20x40 feet, and is divided off into sleeping apartments and feeding floor. The sleeping apartments are used for breeding sows when farrowing in early Spring. The hogs are bedded with straw, and the pens cleaned out and beds renewed every five or six days.

HORSES.

A sufficient number of horses are kept to do the farm work, and a few surplus ones are raised. The brood mares are from quarter to half of the turf or thoroughbred blood, and are crossed with the heavier breeds. The thoroughbred blood gives a symmetrical form, clean limbs, good action, and great power of endurance, while the larger breed gives size. This cross almost invariably produces a good general work horse, good for the plow, the saddle or the road, and commands a fair price in the market.

CATTLE.

The cattle are thoroughbred Short Horns, and high grades, and are kept for the purpose for which cattle were intended, beef and milk. The cows with me are as good milkers as the ordinary breed, when dry fat readily, and when desired no longer for other purposes, bring a good price for beef. My experience is that thoroughbreds and high grades make more pounds to a given quantity of feed than the common breeds; and when sold command a higher price. While common breeds will but little more than pay for their keep, the good blooded cattle will yield a handsome profit. It requires but a small additional outlay, to stock a farm with good cattle.

Two well bred cows, if properly bred, will stock an ordinary sized farm in a few years with a good herd of cattle, and a few choice bull calves sold for breeding purposes at current prices will more than refund the original purchase, and leave the herd clear profit. Beside the gain, it is a great pleasure to a farmer of good taste, to care for and feed a herd of broad backed, round bodied, and beautifully formed cattle; and he is not ashamed to put them in a pasture along the highway where they will be seen by passers-by.

HOGS.

The hogs kept are all pure bred Berkshires, with the exception of a few Poland Chinas. Each breed is bred pure, and no grades are raised. Twelve to fifteen brood sows are kept, and most of the pigs farrowed in March, April, and May. The younger sows are allowed to raise but one litter of pigs each year, but the older and matured ones bring out two litters, early Spring and Fall. After the storms of Spring are past, the sows and pigs are turned out on a blue grass pasture and fed dry corn and slop. The stock hogs run on blue grass pastures and are fed corn, and are usually fattened while running on grass. The grass, as well as corn, is thus turned into pork, and I think that hogs keep healther and fat better when they have an abundance of such green food, which is produced without labor; besides none of the manure is lost, being distributed over the pastures by the stock.

SHEEP.

A small flock of pure bred Cotswold sheep are kept, and are the most profitable stock on the farm. The lambs are dropped in March, the ewes are housed nights and in bad weather. A small field of rye is sown for early pasture, which makes rich food for suckling ewes and causes them to yield an abundance of rich milk, giving the lambs a good start; the lambs soon learn to eat the green rye and grow very fast and become very fat. Lambs thus raised will weigh at five or six months old one hundred pounds, and, with good grass and feed, two hundred pounds at two years old, and will bring

from three to five dollars per hundred, and shear from fourteen to fifteen pounds of wool.

Most of the cattle and sheep and a considerable number of hogs are sold for breeding purpose.

The poultry is of the purest and best breeds. I keep no dogs, but if I did, I would keep no "cur of low degree."

The above indicates my system of farming, which is mixed husbandry—growing grain, grass, and live stock.

The stock is mostly stabled in Winter, and all the manure saved and put upon the land. But the main dependence for improving the fertility of the land is grass, and grazing with live stock.

In regard to my system of handling stock, which is different from that practiced by most farmers, I want to say a word. I keep my stock divided, according to age or condition, into different lots and pastures, more than most farmers do. This enables me to give them feed and care suited to the different ages or conditions, which I think is a great advantage.

A SYSTEM OF A ROTATION OF CROPS

is practiced, but not with the *exactness* which is practiced in older and less fertile countries. My rotation is about as follows: Say six years in meadow, four years in corn; then oats, followed by winter wheat, and again seeded to grass.

The pastures are five in number, and are permanent blue grass pastures. About forty acres of corn are raised each year, the ground being well plowed and harrowed, or dragged with a heavy pole before planting; the corn is check-rowed, and after it comes up is harrowed and rolled, and then cultivated six or seven times. The yield is from fifty to seventy-five bushels per acre according to the season.

About twenty acres are kept in timothy and clover meadow, which yields 1½ to 2 tons of hay per acre. The remainder of ground for wheat is well prepared, and the wheat drilled the first week in September; the yield is usually from twenty to twenty-five bushels per acre.

ORCHARD.

I must not forget the orchard; this contains one hundred apple trees of the standard varieties for this latitude, with a good supply of other fruits raised in Central Illinois. The orchard is a sacred spot, and is not profaned by the tread of a horse or a cow.

DRAINAGE.

My experience in underground drainage is of recent date. The drains are three feet deep; large hickory poles about five inches in diameter are laid in the bottom of the ditch, one on each side, then split slabs of timber two inches thick and twenty inches long are laid across on these poles, leaving a drain five by ten inches. This kind of drain has lasted in this neighborhood fifteen to twenty years. Leading into these drains I shall run a number of tile and mole drains, which will thoroughly drain the land. The drains so constructed keep constantly running until the last of July; and while previously the land was wet on either side of them, now it is in fine condition for cultivation, the corn yielding twice as much as on the high but undrained land.

THOMAS A. POTTINGER,

PERU, LASALLE COUNTY.

He Sold Whenever a Crop was Fit for Market—Believes in Good Shelter for Stock—The Windmill an Absolute Necessity—Tile Drainage the Best Investment a Farmer Can Make—A Cheap Plan for Laying Tile—A Fortune and a Happy Home.

I was born on the 14th day of February, 1842, in Cheshire, England. Came to America in February, 1849. Owing to circumstances beyond my control, I was placed in the Rochester Orphan Asylum, and it was there I was taught those habits of industry that have laid the foundation to a success, which, as a farmer and stock raiser, I think will (considering the limit-

ed means at my command in starting in life) compare favorably with that of the average young man of this country. I think if I owe success to any one rule more than another, it is to the fact that whenever a crop was ready for the market I sold it, took the money and paid my creditors, who always appreciated a promise that was fulfilled at the time of maturity. This rule followed up enables a man to redeem his promises, gives him a reputation that causes every one to repose confidence in his word, and enables him to purchase at generally cash figures. The fact is, farmers can not afford to be speculators, as they have not the means to hold property for a series of years. Nine times out of ten the man who sells when his crop or stock is ready for the market gets the best prices, besides saving interest and reputation.

The farm I own consists of 340 acres. It is quite flat, as most of the land is in this part of Illinois. Ninety acres was purchased in 1856, at $12.50 per acre; $19 per acre was paid for eighty acres in 1863, and $37.50 per acre was paid for 170 acres in 1872. I determined, when starting in life, as soon as I was able to abandon grain raising, and as soon as my means would allow to arrange my farm so that I could raise and feed cattle to advantage.

STOCK.

For ten years my energies have been bent in this direction In traveling over the country I have obtained and utilized. every plan that would save labor in handling, and make my stock comfortable and profitable. At the present time I have 125 head of cattle that feed on 190 acres of land. I generally grow eighty acres of corn, which I feed during the year, buying as soon as what I raise is all fed. I also feed from 100 to 150 head of hogs. I have no particular rule for feeding stock, but I always keep one point in practice, and that is to well feed every thing I own, and keep it in a thriving and fattening condition. From the time of birth to the time of shipment, I aim to feed as much ground feed (corn and oats mixed) to my sows and pigs and young calves as they will eat without wasting.

To the sows and pigs I feed meal mixed in water, to my calves I feed it dry.

In raising and feeding stock, I find that the best bred cattle and hogs are decidedly the most profitable. It therefore behooves every man engaged in stock raising, to breed as good stock as his means will possibly afford. I have learned by experience that it pays best to maintain good, hog-tight fences, allowing shoats to run at will over cattle pastures; provide comfortable shelter for stock, keep them fully supplied with an abundance of fresh, sweet, and clean water; have good, strong gates, properly hung, instead of bars; stack up all the hay raised in sheds, accessible for the cattle to feed at all times. Have corn cribs so arranged and constructed that stock can be fed under cover, and that no grain or hay is wasted in mud by out-door exposure.

FEEDING SHEDS.

My main cattle sheds are 350 feet long, and twenty-six feet wide by eighteen feet high. One division is sixty feet long; this is a hay shed, proper, and the cattle are fed standing on the outside. The cattle are kept out by bolting 2-10 plank at a suitable hight, over which they reach and draw out the hay as it is thrown down. The second division is 125 feet long. The cattle go under this part and have hay thrown from above into racks placed on the inside of the building. The third division is fifty feet long. This has a corn crib on one side that will hold 1,800 bushels of corn. The floor of the crib extends one and a half feet and makes a manger to feed the corn, which is let out of the crib by little doors. This plan saves the trouble of twice handling the grain. On the opposite side from the crib is a manger that contains sheaf-oats and hay, let down from overhead. The fourth division is 115 feet long. Mangers are placed along one side to feed corn. This shed is also used for shelter. One hundred head of cattle can comfortably feed and obtain shelter in these series of sheds. The total cost of construction was about $800. The corn crib is

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filled from the outside. The mangers are filled from a wagon that goes in at one end and out at the other.

FEEDING RACKS.

I prefer racks for feeding hay, to mangers, for the following reason: In feeding in mangers the cattle often crowd and hook, and too frequently cattle are thrown over into the mangers and killed. This is often the case with the mangers at the Union Stock Yards at Chicago. The manger principle is faulty and dangerous, besides being expensive by cattle wasting hay. In the Spring of 1877 I had a good four-year old steer thrown into a manger and killed. I then discarded the manger and adopted the rack. I find the most economical one for use is made as follows: In constructing it in a building or by the side of a fence, I set posts two and a half feet from the side of the wall, have them reach six feet out of the ground, nail three fence boards six inches apart, then extend a small manger one foot wide on a level with the bottom of the rack. This manger is for the purpose of saving what falls out of the cattle's mouths. Under the rack is a space three feet wide and two feet high. This space serves for hogs to lie; for this purpose it is a great advantage, as it protects the hogs from being trampled upon, besides being more healthy for the hogs to be spread out instead of lying so thick together.

CATTLE SHEDS

should be so arranged that husked and shocked corn can be unloaded inside, thus saving the labor of twice handling fodder. It also facilitates hauling out manure. All first-class cattle sheds should be provided with a hay carrier to save the labor of taking hay long distances. In laying off stock yards and making cattle sheds, care should be taken to place the buildings where they will be the most convenient and afford the best shelter; especially should they be protected against the north and west winds. Most farmers make their buildings without any general plan. The result is there is no connection and no shelter, and of course much valuable time and labor is thrown away. The surplus water in buildings should

be carried either into cisterns or disposed of as waste, so that the yards may be dry as possible.

EVERY FEEDER

should have a first-class three or four-ton scale on his farm. To be an expert in judging the value of stock, a farmer should know very nearly the weight of any thing he wishes to buy or sell the moment he places his eye on it, otherwise the world will overreach him, and dearly will he pay for his ignorance. A farmer never having used scales can not appreciate their value; having once had them, he will not be without. Every farmer and stock feeder should have one pair of low wheels or trucks.

THE WINDMILL

has become one of the most prominent economies of the farm. I have one ten-foot Halliday, and one improved twelve-foot California windmill. The twelve-foot mill grinds about 150 bushels of grain in a month, on the average. It also pumps well water at a distance of twenty-five feet from the mill, by means of what is called a quadrant. This quadrant also drives a suction pump that draws the water from a large cistern at the barn, 130 feet distant. It also has an attachment by which all our churning is done. The water pumped is conveyed in pipes to the stable door, to the hog sheds, and wherever it is wanted, thus saving a great deal of labor and supplying water to the stock at all times fresh and sweet. The fact is, the windmill is indispensable, and no large farmer can afford to be without one.

TILE DRAINING.

The people are rapidly waking up to the importance of tile draining. In this part of La Salle County there is much land that is very low and wet, but the topography of the country is such, and the fall is so good, that nine-tenths of the land can be drained advantageously. Within a year I have put down 10,000 tiles. The experience of laying about two miles, has taught me several lessons whereby labor can be saved

in putting in the tile. I find it is a decided advantage, after surveying and finding the amount of fall to the rod, to plow six deep furrows with a common plow, then with a road-grader that is in the shape of a Λ, scrape out the loose ground to the depth of eighteen inches; thus in the start one-third of the ditch can be made with horses. In this manner, two men with two teams can plow and scrape out two or three hundred rods a day. After laying down the tile carefully, and seeing that each tile is bedded firmly, I cover them up with three or four inches of earth. I then take a common ground plow, attach the clevis in the staychain iron of the off-side horse's whiffle-tree, and plow two rounds in this way. Then I place the clevis in the center of the whiffle-tree, and keep plowing round and round, until the ditch is completely covered. By this plan one man and a team will cover two or three hundred rods per day. The advantage of tile draining can be seen in the next crop, and the superiority of the crop and the increased yield makes this improvement one of the best that the thrifty farmer can turn his attention to.

In closing this article, I will say for my part, as a farmer and stock raiser, I am conscious that the life of a farmer is not a poetical one. There is always much work to do, however convenient and handy every thing may be, but so long as I can maintain the farmer's independent spirit, I ask nothing more. I am satisfied to move down the stream of life in the vocation which has made me a fortune, and given me a home which I probably could not have duplicated had I followed any other calling in life.

G. W. MINIER.

MINIER, TAZEWELL COUNTY.

A Good Farmer—Happy and Prosperous — Tree Planting—Orchards — Vineyard — Farm Teams — Mules the Best for All Work—Fowls—Drainage—Farm Buildings—Mixed Husbandry—Management of Stock — Dairying—Land—Sheep the Most Profitable.

My farm in Tazewell County, Illinois, is in section three, N. E. quarter, town twenty-three, west of the third principal meridian, containing one hundred and sixty acres. In addition to this I purchased five acres adjoining my farm on the west.

I bought my quarter section from the United States government in 1850. It was prairie, with a skirt of hazel copse of some ten acres on the west side.

Myself and family, unaccustomed to country life, eagerly engaged in farming. It doubtless would have been amusing, and probably was, to see us at our work. For myself, I well recollect that I found some things about the harness of my horses that I could find no use for. So many useless straps, buckles, and superfluous rings. They were neither prose nor poetry. Schoolmaster, civil engineer and preacher, as I was, or rather had been, I could not engineer the "tackling," as I called it, on the horse's back. Despite all my efforts, the harness would flop crosswise of the animal's back and become annoyingly entangled; and not unfrequently when hitching to the plow, I would, to use a sailor's phrase, get the "larboard" horse on the "starboard" side. And then such jerking of lines, and such thinking of nnministerial language. The poor horses, meantime, saying as plainly as they could speak, "Hadn't you better go back to the city;" or, in the words of the girl, when the shoemaker's boy was measuring her

foot, "I think, sir, you are a little above your business." "But time and chance make all things even," and so my tribulations at length ceased, or rather were overcome. My horses and I are on good terms now, and have been for many a long year. I have often wondered if good horses don't go to heaven, what will become of some men.

TREE PLANTING.

But now new troubles awaited me. It was an admitted truth that timber was a necessity. But to my mind it was more, it was a luxury, and a luxury which I was unwilling to do without. So, having a colt to dispose of, I sold him to Overman & Mann, of Normal, for trees. Very little was said of this transaction in the "Kitchen Cabinet," but if I am a good reader of mind in looks, the conclusion was pretty generally arrived at, that the colt was not the only one that was "sold." Some of my neighbors ventured to suggest that there was, at Jacksonville, an asylum for lunatics. But my trees are my vindicators at this writing, they are from thirty to fifty feet in hight, and for beauty any one of my evergreens is worth a horse.

But this was too slow and expensive a way to have trees. So, in 1860 I planted black walnuts and butternuts. In 1861 I planted the seed of the soft maple, and in 1862 set from the forest several acres of hard maples, all of which trees are now in fine health and the admiration of every one of good taste (the only persons one should care to please in the way of landscape gardening and ornamentation). Add to these, which a kind friend sent me, several hundred seedling white ash, now very beautiful, and for which I thank him every time I see the grove or pass into its delightful solitude. The old adage, that "Providence helps him who helps himself," is doubtless true. It is likewise true that friend loves to help friend who is trying to help himself. My groves are beautiful clumps of trees. I'm no friend to solitary trees. We all subscribe to the good old doctrine, "that it is not good for man to be alone," and so I think of trees.

ORCHARDS

are a necessity, but may be made also ornamental, the whole secret of success lying in few words, "Keep your trees young." That is to say, remove the old and decaying ones, and plant young ones, but not in the same spot where the old ones stood. The above remarks are applicable to apples. Peaches should never be transplanted. Put the seed where you want your trees, and grow them without removing. They are tap-rooted, and no tree tap-rooted can be removed without shortening its life.

A VINEYARD.

Everybody *needs* a vineyard, though some do not seem to *want* one. I was careful to have one. I would advise every farmer to plant at least a hundred grape vines. If he has them not, let him go to some reliable nursery and select fifty good thrifty Concords. Then look over the list with care and take twenty-five more Concords. Then examine once more the catalogue with very great care, look wise, and take the balance in Concords. Cultivate carefully and even prayerfully, but don't cut them into shreds, because some one has recommended pruning. O! if, as some pious people think, trees, plants and animals are immortal, what a terrible account some of us will have to face on the last day.

KEEP ONLY THE BEST.

In the great order of nature, which is but another term for the Providence of God, we have primarily the mineral kingdom, secondarily the vegetable kingdom, and lastly the animal kingdom. Now, since the animal can not subsist on the mineral, the providential order is that the vegetable kingdom lives mostly on the mineral, and so prepares food for the animal.

The farmer will, therefore, find it to his advantage to raise the best, whether vegetables, plants, fruits, or cereals, and the best of domestic animals, and never keep a worthless animal about him, or propagate an inferior variety of anything.

He should be a firm practitioner of the law of the "survival of the fittest."

Acting upon the above rules, my neat cattle are Short Horns, my sheep Cotswold, or Southdown crossed with Cotswold; swine, Berkshire; light horses for driving, and Norman or Clydesdale, or, better, heavy mules for farm work.

THE BEST FOWLS ARE

the bronze turkey, and light and dark Brahma chickens if well cared for and protected. But for chickens which will take care of themselves, I recommend the Dominique. Every farmer needs a shepherd dog. All others, save the rat terrier, are an unmitigated nuisance and should be abated.

DRAINAGE.

On almost every quarter section in Central Illinois will be found some slight depressions and ravines, called sloughs, which need draining. First I tried open ditches, then mole ditches, neither of which were satisfactory. Now I have put tile through all the low places on the farm, and, for a year and a half, they have given satisfaction. I'm sure that we shall not find them subject to being filled with sediment and rootlets of hedges and contiguous trees. I have been careful to retain the water of these ditches on my own farm by leaving an open ditch, or sinking a well at their outlet. I commend this precaution to every farmer tiling his land.

The good, not to say model farmer, will see to it that his household is supplied with small fruits. Indeed, of all kinds of fruit which may be grown in the country, I know of nothing which adds so much to the health, comfort, and pleasure of the household as small fruit. Half an acre, well cared for, will supply the family with all that is needed. Even a shrew of a wife will smile under its modifying influence. The children are not only cheerful, but joyous for having it, and it cheats the M. Ds. out of many a bill. Few families are unhealthy who use abundance of fruit. Fruit patches may be so arranged as actually to add to the beauty of the landscape.

So, also, may the orchards. Our mistake is, we make everything look so prim and artificial, when in truth we ought to arrange our groves, fruit-plats, and orchards, so naturally that dame Nature will not blush to call them all her own.

FARM BUILDINGS.

I once asked a very wealthy and distinguished farmer to point out his house. "Yonder, sir, is my barn," said he, pointing to a large and apparently commodious structure. "It matters not about the house, the barn shows the status of the farmer." Without proposing to dispute my friend, I must nevertheless say that the family deserves the first and best attention; and no improvement gives so much material value to a farm, as a good, convenient and comfortable home. Barns are useful rather than ornamental; sheds and outbuildings of every description should follow the same rule. The house on my farm is a two story structure, 30x36, three rooms and hall in each story, with cellar under all. A wing 20x20 for dining-room with sleeping room above. A kitchen attached to this 20x12 for cook room, with bath rooms attached. A porch in front of both main building and dining-room, and a bay window for winter plants complete our domestic arrangements. Near by, not contiguous, is the ice-house, shop and wood and coal shed. Nor do I think this too expensive a house, or arrangement for a farm of one hundred and sixty acres.

BARNS AND CRIBS.

The horse barn with three bins for oats, or corn, stalls for eight horses and hay loft, two hay barns, one closed and one with open sides, one corn crib, one shed for sheep and one for pigs and another for bees, are the buildings on the farm. More might be added, perhaps, to advantage, and a less number would do.

AVOID EXCLUSIVENESS.

One of the prominent evils of Illinois farming is the tendency to run into exclusiveness. It is a coarse but common saying, with a large admixture of truth "that we run every

thing into the ground." Just now the rage is for wheat in the cereals, and sheep in stock.

Both have "paid" for the last few years, and if not made exclusive will still pay.

GRAIN.

Corn (maize) is the chief crop in this the central part of the State. For a rotation of crops we use oats, rye, clover and timothy, all to be fed to cattle, sheep and swine. I have satisfied myself that we can make it profitable to use the hoe in cutting out weeds and grass even after we have laid our corn by. Fall plowing pays well, and the more manure we scatter on the surface of our fields the better for the coming crop. It is not only bad economy, but absolute wastefulness to neglect or ignore the manure piles.

MANAGEMENT OF STOCK.

Short Horns for Central Illinois are doubtless the best. For breeding they must not be too fat. Our State and County fairs should offer premiums for cattle direct from pasture only. The cattle that are taken to our fairs are generally worthless for breeding purposes.

SHEEP

are among the best and most profitable stock that can be kept on the farm. My choice is the Cotswold for flocks of from fifty to a hundred. For massing in large flocks the Merino is better.

HOGS.

For early maturity, to which we are fast coming, I find the Berkshire best. I care very little for "buildings" for pigs or hogs, but shelter in stormy weather is, of course, desirable. May pigs, with change of pasture and corn soaked twelve hours, will insure fine shoats for market in November, free from disease.

HORSES.

We shall never have a perfect farm horse until we combine weight, muscle and vigor in the same animal. Perhaps the Percheron-Norman approaches this combination as nearly as any other. Some prefer the Clydesdale, others still the Ca-

nadian. But for real hard service on the farm I use neither, greatly preferring large active mules. For driving I find none equal to the Morgan. As a rule, large horses are poor roadsters.

BEES.

Every farmer will do well to keep bees. I have found them always profitable, but think it will not do to keep too many of them in close proximity.

FRUIT.

I have already said all I need say on this subject, but will add that I find no apple so profitable as the Ben Davis. With all my prejudice against it, it has overcome my scruples.

DAIRYING

will soon be introduced, more or less, in all farming operations. But I do nothing save for family use. I find the best cows for producing milk to be the common stock of the country, improved by judicious selections generally best made by the housewives of the country. This part of husbandry deserves more attention than it is receiving from the Illinois farmer, as a rule.

LAND.

The eastern portion of Tazewell County is high, rolling prairie, intersected by streams of water and skirted with belts of timber. The western portion, bordering the grand navigable Illinois River, is a sandy loam, well underlaid with coal. Timber and springs abound. Farms throughout the county are valued at from twenty to one hundred dollars per acre.

CONCLUSION.

My best paying fruits are apples, grapes and strawberries. Little account is taken of any of them save the apple. Still, these smaller fruits enter so largely into the necessaries and luxuries of the dining room, that they should not be ignored. Corn is, however, *the* crop of Central Illinois. Certainly the most important cereal. Wheat, in certain localities, and on clay soils, which lie chiefly along the belts of timber, is always to be encouraged.

Sheep, "the animal with the golden foot," as the Spaniards call it, is the most profitable creature on the farm. It will live on shorter feed than any other animal, and yields a rich return. This habit, however, of short feed for sheep is to be greatly condemned. It is wasteful, cruel and cowardly. A sheep seldom dies insolvent. It enriches the fields upon which it feeds, and gives, besides its fleece, the richest, healthiest and most nutritious meat for the table.

A year ago, I had a flock of 101 sheep which I held at $300. From this flock I sold, in rams, old sheep and wool, to the amount of $244. My flock was then as numerous as, and more valuable than, when the inventory was first taken. Afterwards I sold, in old, unprofitable ewes, fattened, $64, one buck lamb $5, and one choice Cotswold buck $15, making an aggregate of $328; and still my capital is not impaired, for my flock is yet worth $300. Can any other animals show so good results? I think not.

I must add that sheep are a precarious property. They have so many enemies that a constant watch is necessary. The legislature ought to place a liberal bounty on wolf scalps, and put a heavy tax on dogs, both of which animals the flock master hates with a perfect hatred,—especially the dogs.

GEORGE P. WEBER,

PAWNEE, SANGAMON COUNTY.

Methods of Mixed Husbandry—Reasons for Naming a Farm—System—Holstein Cattle—Cotswold Sheep—Berkshire Swine—Horses—Firm Believer in Rotation of Crops—I Never Grow More than Three Crops of Corn on the Same Ground in Succession—I Trim Hedge Twice a Year.

MEADER FARM

proper comprises about 420 acres, parts of Sections 9 and 10, of Town 13, situated in the southern part of Sangamon County, Illinois. There are, however, as many more acres in several tracts, belonging to and operated in connection therewith. This farm is, excepting a forty-acre timber lot, undulating prairie, with good natural advantages for draining. The soil is a rich, black loam, and produces abundant crops of every thing adapted to Central Illinois.

NAME.

I regard a farm name somewhat in the same light that I do the trade-mark of a manufacturer. It excites a pride in every thing connected with the place. It is an incentive to establish and maintain an honorable reputation, and often, as in this case, tends to perpetuate the work of the respected dead.

MY PRIDE.

Hap-hazard farming will never succeed. Changes must be made to suit the circumstances or surroundings. But plans must be made and executed as in every other profession. The pride of this farm is a herd of Holstein cattle, a flock of Cotswold sheep, and a herd of Berkshire swine, with the necessary horses to perform the work.

CATTLE.

I aim to keep about seventy-five head, and as the number of pure-bloods increases, the grades are sold off. I have about

twenty-five cows. Give the calves most of the milk in Summer, and make butter in Winter, which sells in Springfield at from twenty-five to thirty cents per pound. Cows are pastured as much of the time as possible. In Winter are kept in barn cellar by night, fed morning and evening, and turned out by day. Females that prove good at the pail are sold for milch cows; others for beef. The males not used for breeding purposes, are castrated, and sold generally off grass, in July, at two years old. Sometimes are fed on grass. Usually weigh from 1,200 to 1,400 pounds. Calves, both sexes, are stanchioned first Winter, and fed hay and one gallon crushed corn each per day. Yearling males, as well as twos, are fed outside, with hay, when cheap, or corn fodder and straw, together with some cut or crushed corn.

HORSES.

As young horses are broken, the old are sold off. I raise only enough to do the farm work, breeding for medium size, good wind and action, such as are properly classed as horses for all work. The only pure blooded breed with which I am acquainted is the Cleveland Bay.

SHEEP.

I am breeding Cotswolds. But few, as yet, recorded. Have about 100 head breeding. For several years have sold all the rams for breeding purposes at $10 per head. Tail out the ewes every Fall and sell to breeder or butcher, whichever will pay the highest prices. Sheep run on pasture all the time. Feed nearly one bushel corn per head, during Winter and lambing season, or its equivalent in oats. Feed hay, if grass is very short, and when ground is covered with sleet. Never shelter, except in cold, rainy, or sleety weather, and during lambing, at which time every care must be taken; and it will then pay to keep a man with the ewes night and day.

HOW I MANAGE MY SWINE.

I keep from fifteen to twenty breeding sows; two families, each headed by a good male. Breeding stock all recorded in

American Berkshire Record. A pedigree does not hurt any animal, and without it no breeder can tell what he is doing. Sell all I can to breeders; the remainder for meat, generally in June. Have quit doctoring. Let my hogs have as much range as possible. Keep them out of the sheds, except in bad weather. Bed fresh once a week. Burn old bedding, cobs, etc., and let pigs have access to ashes. Change feeding place every few days, if not more than fifty yards. Give but little corn when grass is fresh and good. Know that an exclusive corn diet is injurious. They will die sometimes, the best we can do. Separate the small from the larger, and give them all slops from milk house and kitchen. Use air-slacked lime, or wood ashes with salt, for worms.

GRAIN AND ROTATION OF CROPS.

Most of our grain is grown by "renters." I receive one-third of all kinds grown, corn husked and in crib, and small grain in half bushels at threshing machine. This to avoid workmen in the house for our women to take care of.

I am a firm believer in rotation of crops. A little corn, a little pasture, a little meadow, a little wheat, a little oats, a little rye, a few of the different kinds of farm animals, and always something to do, but never crowded. Our soil is inexhaustible, and something is sure to hit. One of our most successful farmers, when I asked him for his key to success, said, "Do not be afraid to throw out a few dollars in the shape of grass seed, and never grow more than three corn crops on the same ground in succession." He knew just what he was talking about, as I have learned from actual trial.

POULTRY.

My wife has charge of this matter, and has succeeded well with light Brahmas. She is now trying Plymouth Rock. Has a few turkeys, ducks, etc., etc., the true value of which we have not the slightest conception of. We know, however, that they are very greatly under-estimated.

Of bees, fruit, and vegetables, we raise only enough for home use and some to give away.

FENCES AND FIELDS.

Fences are of rail, board, and hedge. The latter I prefer, trimming twice a year. Believe it is better for fencing, and know it is much cheaper. Fields are from forty to eighty acres in size. The whole field must be planted to one thing, so that after it is harvested the stock can be turned in to glean.

Ornamental trees and flowers are neglected for an imaginary want of time, but I do not think a farm decent without them, much less a model.

E. A. GILLER,

WHITEHALL, GREENE COUNTY.

Plowing "Haw" Made a Pond of It—Plowing "Gee" and Tile Draining Have made it one of the Most Profitable Farms in the State.—How to Tile a Farm.

The farm I own and am living on, is situated in Greene County, Illinois, and consists of five hundred acres, three hundred prairie and two hundred originally timber, one hundred and forty of the timber being now cleared and in cultivation. The prairie and timber joining the prairie land is level, the timber land more rolling. The prairie is a black, rich loam, the soil being from one to three feet in depth, with an excellent, porous sub-soil. Thirty years ago, when I first bought the farm, it was considered too flat and wet to be very productive, and had been rented out for years. The cockleburs and Jamestown weeds had taken possession of the plow land. The sumachs, briars and thistles, for two or three rods, had captured the fence corners, and the horse weeds, alders and other noxious weeds, nearly half the meadow land. In one part of the farm, near two acres in one patch had been given up entirely, and cottonwoods eight inches in diameter were actually grow-

ing among the timothy. A good farmer had contemplated buying the farm for one of his sons, who declared that he "would not have it," and "would like to see the man that could make a living upon it." Such was its reputation then; to-day it is considered

ONE OF THE BEST AND MOST PRODUCTIVE FARMS

in Greene County. A few years ago, examining the assessor's books I found only one farm in the county assessed as high, acre for acre, as my own. Now the question is, what produced the change? When I got possession of the farm I found that those who had cultivated (*at*) the land had invariably plowed "*haw*" —thus making a pond of each field. The roads had not been worked, and in the Spring of the year were almost impassable. In a wet time the surplus water from adjoining farms poured on to the land and sometimes drowned out the growing crops. I have frequently known the fences to be taken down in order that teams could pass through the pastures. You will think this a gloomy picture, but it is a correct one. The winter wheat crop was considered so uncertain that few ventured to sow more than a few acres, to bread and furnish themselves with seed. I immediately commenced plowing "*gee*," threw up the roads as fast as possible, so as to get an outlet for the water, began a thorough system of surface drainage, then seeded the land down to grass as soon as possible. I never had much faith in the old mole ditch, and as soon as tile began to be manufactured in the locality I commenced using it, so that to-day there is

A PERFECT NET-WORK OF TILE

laid all over the farm. I was bothered at first to get outlets, but finally persuaded my neighbors to drain their land and thus furnish me outlets. The result is that their land is just as good and productive as mine. Where I could not get an outlet, I dug a few wells about six feet deep, walled them up to about three feet from the surface, and let the tile into them, and it answers an excellent purpose. I dug them large

enough so that they can easily be cleaned out. Now for the results: I never fail to raise

A GOOD CROP OF CORN, WET OR DRY.

Two years ago I spent between three and four hundred dollars draining one eighty, that had been in grass a long time. It was very level, and in a wet time would almost mire a snipe. The main drain was 800 rods in length and in some places five feet deep, in no place less than three feet. It ran angling across the eighty, commencing at the south-east corner and crossing the highway near the north-west corner, thence running through my neighbor's cellar, which, in wet seasons usually had two or three feet of water in it until near mid-Summer. Of course it was good-bye to water, and it was then possible to dig the cellar a foot deeper. The tile in the main drain were mostly six inches in diameter. The Summer being an unusually wet one, neither my neighbor, Mr. L. P. Griswold, who is one of the best practical farmers in the county (his farm being thoroughly tile drained), nor myself, if our lands had not been so drained, could have raised over thirty bushels of corn to the acre, if as much. As it was, I got over sixty bushels to the acre, and in place of the land being covered with foul, noxious weeds, it was perfectly clean. Figure the result. Eighty acres, sixty bushels per acre, 4,800 bushels; at thirty cents, which I could have got for it at the crib, $1,440. Take half from that, and it leaves $720 the first year, or a profit of over $300, and the draining done for all time. Last Spring I spent as much more on the field, having found out the previous Summer just where it was needed. This has been one of the dryest years we have ever known, not more than enough rain having fallen after April to lay the dust until the last of October, nevertheless we are husking

A GOOD PLUMP SIXTY BUSHELS PER ACRE

off the same field. Wet or dry, it makes no difference; if the land is thoroughly drained and well tilled, we are sure to have a crop. Last Spring there was no water in the ground, so I got a large tank and hose and hauled the water to grade my tile ditch

with, and I think that I got a better and more regular grade than though the ground had been full of water. I thoroughly drained another eighty in the same manner. Some of it was very difficult to drain. Had to go six feet in some places in order to get 2½ feet in others,—but we made it. My farm is no model farm, but it pays on the investment. In other words it is a money making institution, and that in this fast age is the great desideratum.

THE BEST WAY TO TILE A FARM.

I will suppose a case, and then describe my mode of procedure. We will take, for instance, an eighty acre lot. The first thing I do after deciding where to run the drains, is to prepare a main outlet. If there is a natural one, such as a ravine, or a very low place, so much the better; if not, I immediately dig a well about five feet across and say six feet deep, and into that let one of the tile project a few inches. After being walled up with brick or rock, it is at any time easily cleaned out. I then, after digging the ditch, lay in as large sized tile as I think necessary to carry the water off rapidly, generally six inches at the outlet, tapering off towards the head with fives, fours, and threes.

I NEVER USE LESS THAN THREE INCH

tile, and when necessary, I run an affluent, or prong, for threes or fours, in any direction needed, by putting in a Y, or tile made for the purpose. I never, under any circumstances, allow any tile to be laid in any of my level fields, unless first tested with water, and am very careful to have it ripple in every part of the drain. Should the ground be very dry, as it was last Spring, when we put in several hundred not to say thousand rods, we have a large thresher's tank and rubber hose, out of which we make a syphon, and thus let the water into the ditch, moving along two or three rods at a time, as may be necessary. Now remember, as we go up the grade,

THE DITCH IS DUG AS NARROW AS POSSIBLE,

generally two spades wide at the top, and a little narrower at the bottom. The spade used is a narrow steel spade, about a

foot long in the blade, on which we get the blacksmith to weld a stirrup, or spur, at the side, that will suit the foot. This is sent in the full depth every time, and the loose dirt is thrown out with a long-handled shovel. We are very careful not to get too deep before testing the drain with water. We now take a long-handled shovel, which is best for the purpose, and of which we have different sizes to suit the different tile, and cut a narrow channel in the bottom of the ditch, in which the tile will lie snugly, then put a spadeful of earth in the ditch above the tank, and let the water in. It takes two to do this part of the work to advantage, one in the ditch to mark where there is any dead water, and grade below the same until it ripples along nicely. Then when you have graded as far as the water will move freely, drive on and repeat the operation. I

ALWAYS USE ROUND TILE,

which are strung along the edge of the ditch as soon as it is graded, so that they are easily reached by the man who is laying them. They are placed in their bed as snugly as possible, the person laying them turning the same until they fit as close as possible. There is no danger of getting them too close. Occasionally the man kicks them with his foot so as to make them lie firmly, and it is quite a task to take a tile out when properly laid. He then walks on top of them to see that they are even and solid, and should there be any holes, cracks, or defective places, he takes a piece of broken tile of the next larger size and places over it. The tile laid, he commences at one end with the narrow spade and throws down the dirt from the side, thus covering the tile sufficiently so that there is no danger of its moving, walking on the same until all is covered. This is done very rapidly.

HOW TO COVER TILE.

A strong pole, about twelve feet long, is then fixed with a clevis at one end, to which is hitched one horse, and a plow clevis is arranged so that it can be moved along the pole in different notches, to which is attached a good three-horse plow.

Another clevis is attached to the other end of the pole, to which are hitched two horses. Then, with one man to drive the team, and one to hold the plow, it is a very little trouble to fill in hundreds of rods in a very short time.

TILE WELLS FOR STOCK.

Last Spring we arranged two drinking places for our stock, as follows: After choosing the location, we built a stone wall over the tile up to the level of the ground, then graded down to the tile for a distance of two rods, and made a rock trough, about a foot wide, by placing flat rock at the bottom and putting in long rock at the edges, then paving back up to the level ground with good sized rock. We put iron bars across the tile below, to keep out the trash. It makes an excellent drinking place for the stock, and the water is always clear and pure. Tile drains and wind mills have made such

A REVOLUTION IN FARMING

in this part of the country, that people wonder how in the world they ever got along without them. One of my neighbors is going to put 15,000 tile in one field next Spring; five of six-inch, five of five-inch, and five of three-inch. On an adjoining farm, of which I had charge last year, we expended a little over $300 in tile draining. Previously no one would undertake to plow the same.

WE THEN RENTED THE LAND FOR TWO-FIFTHS

of the crop, and now they are gathering nearly seventy bushels of corn to the acre, and I am besieged all the time with applicants to rent the land next year on the halves, they finding every thing and delivering the corn in the crib. This land had evidently been the bed of a lake at one time, and is a rich, black loam, and very flat. A little more tile will make it the best land in the vicinity. It belongs to the Totts estate, and this one crop has increased its value one-third.

IN CONCLUSION

no farmer who owns flat land, susceptible of tile draining, can afford to neglect it any longer. Money invested in tiling is far

better than ten per cent., but be sure to have good tile. I think that there are no better made in the State than those made here.

I think a visit to my farm by any one who has not yet done any tiling will so thoroughly convince him of its great benefits that he will go home and do as I have done in this particular.

H. W. DAVIS,

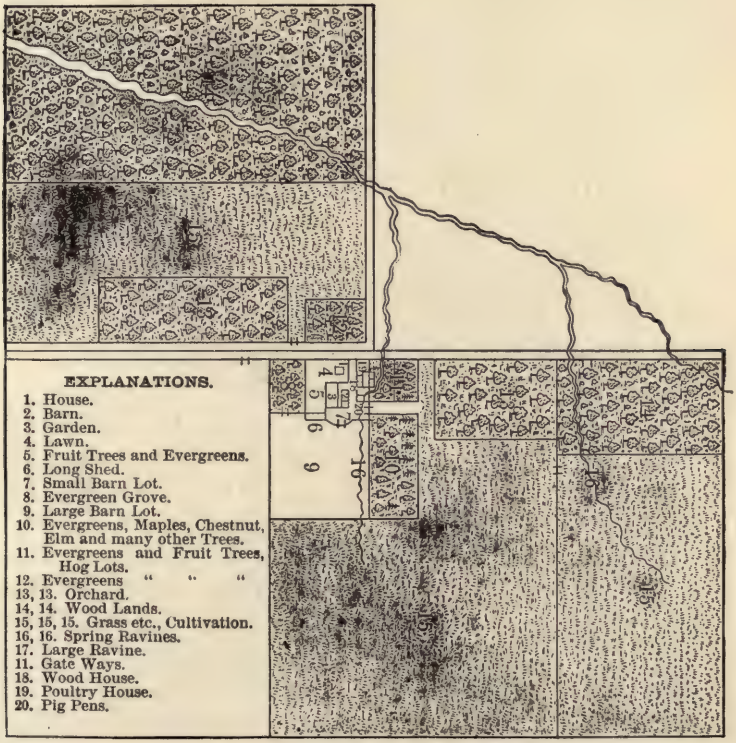
DECATUR, MACON COUNTY.

Mixed Husbandry—Tiling is Working Out the Road Problem—Feed on the Farm all the Grass Grown—No Cure for Hog Cholera, But a Big Preventive.

Connected with the region of the Grand Prairie, where the ever flowing Sangamon River, with its many creeks and rivulets, contributes to water and drain and timber the soil, this great expanse of grass and corn-growing country, has appeared to me to be about the center of the Universe, neither too far North nor too far South. It has been complained of as being too muddy at times, and again too dry; too cold, and too hot; in short, too changeable. But these charges are made mostly by old chronic grumblers, who are never satisfied with any thing or any body. Our lands are about one-quarter timber and three-quarters prairie, mostly dry enough, slightly rolling. Some of the prairie contains small ponds or basins that hold water a part of the year, but ditching and tiling will soon cure the worst cases.

THE SOIL OF THE PRAIRIE IS ALL GOOD,

and there is hardly an acre to be found in a day's ride but can easily be made to produce abundant crops. No waste land whatever. True, our rich loamy soil, when water-soaked, mixes up into mud, and at times we have bad roads; but tiling is working out the road problem, as well as the drying of fields.


EXPLANATIONS.
1. House.
2. Barn.
3. Garden.
4. Lawn.
5. Fruit Trees and Evergreens.
6. Long Shed.
7. Small Barn Lot.
8. Evergreen Grove.
9. Large Barn Lot.
10. Evergreens, Maples, Chestnut, Elm and many other Trees.
11. Evergreens and Fruit Trees, Hog Lots.
12. Evergreens " " "
13, 13. Orchard.
14, 14. Wood Lands.
15, 15, 15. Grass etc., Cultivation.
16, 16. Spring Ravines.
17. Large Ravine.
11. Gate Ways.
18. Wood House.
19. Poultry House.
20. Pig Pens.

When farmers have money to spend in improvements, it will mostly be used for tile draining. The present season corn has yielded 100 bushels per acre in some fields. Forty bushels of wheat (winter) have been raised by several of our careful farmers. Good farms are worth from $25 to $40 per acre. We raise the best stock. Of horses, the Norman and Hambletonian. Of cattle, the Short Horn, the Devon and Alderney. Of hogs, the Berkshire, Chester White and Poland. Of sheep, the Merino, Cotswold and Southdown. Mules are bred largely. Of fruits, the apple is grown with good success. Hardy grapes grow in abundance, while pears, peaches and quinces fail sometimes, but are frequently plentiful. In fact, our soil will grow any thing that can stand our Winters, which frequently reach 15° to 20° below zero.

MY FARM

is an old one for this county. Situated six miles east of Decatur, in Macon County. It consists of 120 acres, and was settled about fifty years ago. It is the old homestead, and on it I was born. Several tracts of land have been farmed in connection with the old place, but the original 120 has been the stand-by. Like the faithful old horse, it is not to be traded or sold. The natural advantages are and have been of the best. The soil, a deep black loam, is quite fertile. Originally about one-third timber, it is all now tillable, except about twenty acres, through which a considerable ravine passes. Here, on either side of its undulating banks, which are mostly set with blue grass, many of the mighty monarchs of the forest are still standing, under whose shading and sheltering branches the stock find water, food and repose.

The farm is L shaped, with the buildings in the angle of the L, so that the remotest part of the farm is but little over eighty rods away, and is conveniently reached without much labor. Public roads pass in three directions, north, south, and west, taking the angle of the L. The eighty is surrounded by a hedge fence, and is also divided in three equal parts by two cross hedges. The forty is partly hedge and partly rail fence, divided in about the center by a rail fence, which has reached

its present position by a series of removals, as the timber has been made to recede before it.

The west and northwest is sheltered by natural groves, but as these are beginning to disappear before the woodman's ax, artificial groves have been grown to meet and mingle, and break the cold north wind. Two small ravines, or spring branches, and one large ravine, furnish living water for stock the year round, and are situated on each division of the farm. Although a large portion of the land has been in cultivation for a long time, its fertility is nearly as good as when first broken. No artificial manures, or patent ones either, have ever been used. The plan has been to

FEED ON THE PLACE ALL THE GRAIN AND GRASS

grown upon it; and with favorable seasons the crops are still abundant. The principal crops have been corn, hay and grass, with some wheat each year. Sixty to seventy-five bushels of corn per acre and twenty-five to thirty bushels of wheat have been frequently raised. The pasture land is blue grass and white clover, which is plowed under and put to corn for three or four years, then sown to wheat and seeded with timothy, or seeded without the wheat and used for hay two to three years. Turned to pasture one or two years, brings it back to its starting point again. This is about the best rotation I have ever been able to make. The cleanings of the barnyard and the manures from the stable are mostly used on third or fourth year corn ground, thrown in heaps over the field during Winter and scattered about just before plowing in Spring.

HORSES.

My horses, or rather colts, are bought at weaning time. Ten to fifteen head, and even more have been kept and grown to two and three years old. They are then mostly sold to neighboring farmers. I have now fifteen yearling colts and eight foaled this season. A number of these are graded Normans from a horse I raised myself. Their feed is grass in Summer, hay and fodder with some corn in Winter; but all they will eat of good hay is the best feed. I have wintered them so in ex-

cellent condition without any grain whatever. I give them a free run outdoors, all weather except stormy, when they have sheds to stand under, or stables sufficiently close to break the wind. My barn, 30x60 feet, has stabling for 20 head ranged in two rows, with a six foot feed-way down the center, and a "lean-to" stabling ten more. No disease except the distemper has ever been prevalent among my horses, and they scarcely ever need further treatment than good care from rough, stormy weather.

GRADE ALDERNEY CATTLE.

I keep on this farm from 15 to 25 head two-year-olds and under. My cows are kept longer. The rule is, when maturity is arrived at, or near, "to sell," and raise up younger ones to supply their places. I have been making milk and butter quite an object for several years, and to this end I have procured an Alderney bull of good strain and crossed him with the best native milkers I could get. The result is very satisfactory. I have thus obtained some of the best milk and butter cows I ever saw. I am now using the second bull, and have made some very satisfactory sales of graded heifers and cows, as I had them to spare.

HOGS.

I have been in the hog business, and I have been out too. For a few years I have kept quite a number of graded Berkshires, ranging from 30 to 40 head, and sold them as stockers. I butchered 44 head last season and made them into bacon, and think I did much better than selling at 2¼c. per lb. gross (all I could get then). I am now convinced that unless a surplus of corn is raised, to sell as stockers is best, selling as soon as 100 lbs is reached, or in about two months after weaning. This is the plan I am now pursuing, keeping about 10 graded sows to breed to the best boar I can get. The result is about 100 shoats, more or less, per year to sell, which have consumed but little corn. Last year I lost a number of young hogs by cholera. I have no cure to offer, but an awful big preventative: separate all affected pigs and change pasture with the balance at once. If they drink or eat together they will

take the cholera. If they don't they will not, even if kept in adjoining pens.

FOWLS.

Six years ago my wife and I began to keep fowls; and I presume pretty much all over the country the "fowl fever" raged. We at once bought some fine "fowls." Before this we kept chickens, but did not count them of much consequence,—a kind of "necessary nuisance." We bought from the best sources, light and dark Brahmas, buff, partridge and black Cochins, Plymouth Rock, Houdans and Grey Silver Bantams, also the Rouen, Aylesbury and Pekin ducks. We gave them good care in separate yards, and attended the fairs and poultry exhibitions with considerable success. We learned something. The fever I think did us good at least in one direction. We have learned to look upon "Biddy" with more respect, and consider that she occupies no mean, or even small place on a farm, when reasonably attended to. We now keep only two breeds, and expect to come to one as soon as our choice is fairly made. I would add, let no one be afraid to handle for the use of the farm, either the Plymouth Rock or black Cochin, for they are excellent breeds, both for eggs and table use. Give them good warm Winter quarters, and you will have eggs the year round.

ORCHARD.

No farm is complete without an orchard. I mean apples, for while we may not raise peaches, pears and quinces every year, we can have apples. I have devoted some twenty acres to the apple, and paid no little attention to its varieties and cultivation, both in nursery and orchard, and have tested on my farm over 100 kinds. Varieties should be selected to suit the locality and soil. A good many varieties do well in many places, while many more do well only in particular soils and climate. For my orchard I want, first, good hardy trees that will live; second, varieties that will bear so I will have fruit; third, the best and most salable apples I can find. I do not want too many sorts. Eight or ten varieties are enough, if we know just what we want.

My plan to plant an orchard is to prepare the rows with the plow, by plowing up and down the sloping lay of the land, unless very steep so as to wash in gullies; in this case, plow the rows across. Set the trees in these rows. No need to row crossways, but give more room to large-growing kinds and less to small growers, for some varieties require as much again room as others. After planting and shaping the trees by trimming, keep them well cultivated the early part of the season for three or four years. Work the dirt towards the rows, if the ground is near level, then seed to clover, and they will usually begin bearing by that time. I do not believe in much trimming. Trees bear much younger if the small inner branches are let alone. I have frequently grown from one to two bushels of apples on young trees. If the cleaning of main branches that many practice had been done, it would have taken off all the apples. The orchard should be visited often, and insects watched carefully, but the knife had better be lost or left at home in most cases. The old adage, "pretty is that pretty does," must apply to trees, and in an orchard I think it means fruit, rather than the comely park or lawn shaped tree.

NOAH WEBSTER,

BIBLE GROVE, CLAY COUNTY.

Stock Raising—Methods of Growing Winter Wheat—When to Plow and When to Sow—Clean Seed—Force Drill—Good open Drains—Spreads Manure—Good Crops and Fair Profits the Results—Never Sows Grass Seed When there is Snow on the Ground—Horses, Hogs and Sheep.

My farm is situated in Bible Grove Township, in Clay County, Illinois. It contains five hundred and sixty acres. Four hundred and forty are of prairie, under good cultivation, and well adapted to the growing of grain and stock-raising, with dwellings and out-houses as follows: One thirty-six by forty feet, with good cistern and well of water, frame smoke

house, good milk house with cellar underneath the same, and convenient out-buildings; good barn fifty-six by sixty-four feet, well arranged for stock, with cistern, nine by twenty-two feet deep, which affords ample stock water; also, good wagon, carriage and implement shed, twenty-four by twenty-five feet; also, good frame school-house near center of farm, together with three other comfortable dwelling houses for tenants, and good stabling for same. The wheat crop out on farm, usually some two hundred acres, generally does well. Corn about one hundred acres, averages a fair crop. One hundred and thirty-five acres in grass, all well watered for stock by good ponds and wells, making splendid pastures. It is also a good fruit farm, being bounded on the west by a fine skirt of timber, and also on the north sufficiently to protect the fruit trees, which never fail in apples, cherries and grapes. I find it a good place for bees, as it is near the timber where they get the early bloom off the maple tree and other early flowering timbers.

MY FEED LOTS

are arranged near my barn, in the timber, where they are high and dry. The timber protects the stock from the winter storms, and with good racks it is no hard task to feed my cattle, which do much better than those out in the open prairie, where they have no shelter from wind, snow and rains. My feed lots and timber pastures contain one hundred and twenty acres. Adjoining my prairie land there is a small creek running through the farm, which affords stock water the year round, unless it is uncommonly dry. Growth of timber—oak, hickory, ash, mulberry, cottonwood, sugar, linn, walnut and elm, some wild cherry and sassafras, and wild locust; timber land high and dry, no bottom of a low wet nature on the stream in this part of its run.

LOCATION.

I am located in a good healthy part of the country and about four miles north-east of Georgetown, a good and thriving country village. I try to have good and sufficient teams, good farming implements, such as plows, harrows and good

field rollers. For wheat, I plow my ground in the months of June and July, harrow in the month of August, then drag and pack my ground well with a field roller, and no later than the tenth of September I commence sowing, no matter how dry it may be. I never wait for rain, as I would much rather sow in the dust than mud. The rain will come in time to bring up the grain. I make it a point to select good clean seed, and usually sow one and one-fourth bushels to the acre, putting in with a good force-feed drill, and open good surface drains or ditches so that the surface water will find its way off of all the wheat ground. When this is all done, and all the stable and barnyard manure is well spread on the ground, I never fail to raise a good average crop and obtain fair profits for my labor.

GRASS SEED.

The corn crop has been only an experiment for the last three or four years. We could only plow and plant when the weather would permit, and the yield has been small. In 1879 I had a fair yield, for the season was very good. I raise considerable grass. Red Top is the principal grass grown in this locality. Blue grass and clover grows well on timber land. I sow my wheat in the month of February, and my grass seed when there are warm days that will thaw the ground a little so that the seed will catch. I never sow when there is snow on the ground, for when it melts away it carries the seed in streaks. I never fail to get a good stand for meadow. I frequently thresh my Red Top hay and sell the seed, as it will pay some profit. When the seed is thirty-five cents per bushel the profit is small, but at forty-five or fifty cents it will pay a fair compensation, as the hay, after being threshed, makes good feed for stock. I have wintered my cattle on the hay after it was threshed, and nothing else, and they have come out in the Spring looking well.

RAISING CATTLE.

Raising cattle is my principal business, though I raise a good many hogs and some horses and mules, but find that cattle are more profitable. I generally buy year-olds and keep them on

my farm until they are three or three and a half years old, when I sell them to feeders to fat, and replace them with year-olds again. I usually keep a "bunch" of three-year-olds and some two-year-olds, so that I can sell a lot every year, and can always feed my "roughness" to them, which otherwise would be lost. I find that this way pays a profit for my labor.

HOGS.

I keep a good stock of hogs. The Berkshire I find to pay best. Keep good brood sows, which I try to have well cared for, and bring their young in the Fall and Spring. No trouble to raise hogs, and make them pay, even at the low prices for pork, though not as profitable as a few years ago, when prices were double.

SHEEP.

I want the best breeds. They should be kept, to do well, on good dry land pastures, where the feed is kept short, as they seem to do better on short tender grass, than on long rank growth. Their wool pays a small profit, and the mutton always finds a ready sale and pays a profit, and they are good hands to keep down growths of weed and sprouts on a farm.

I only keep what horses I need for work, as there seems to be no pay in a surplus now, the prices are so low. Some young ones that are growing up to take the place of older ones when sold off, are profitable to me, as my rule is to sell off all horses before they go down with old age on my hands. Never lost but one grown horse in my life. Mules are profitable, as they bring fair prices and make good teams. My motto is to sell any thing when the price will pay.

PETER R. PARSELL,

JERSEYVILLE, JERSEY COUNTY.

A Successful Farmer—All Stock Fed on the same Principle—Ready for Market the same Time—Valuable Suggestions—How to breed Horses and Mules—How to make an Osage Fence—Winter Wheat and Corn Culture—Dairy—Management of Short Horns.

OSAGE FARM

is three miles east of Jerseyville, Jersey County, and contains 320 acres. I bought it April 16, 1866. At the time of purchase it was covered with a growth of hazel brush and black jacks. One of the greatest inducements which led me to buy it was its location and natural advantages. Plenty of living, running water, high rolling prairie, sandy soil, limestone subsoil, with easy access to churches and schools, and first-rate markets, either by river or railroad. I paid $15.50 per acre for the land. Just five years from the date of purchase, the desired end was accomplished. My farm was broken up and hedged with osage into lots of 10, 20 and 40 acres.

THE IMPROVEMENTS

on the farm consist of one two-story frame house, containing nine rooms with kitchen; a large barn, 66 feet long, 42 feet wide and 18 feet high, having stable room for 54 head of stock, with feed and hay-loft room for 150 tons of hay. I use hay fork and rod for unloading hay. Hay scales 20x20, with shed; barn 16x20 for young colts and mules; barn 16x30 for calves; shed and granary 20x36. Large stock-well, with windmill so arranged that it pumps and supplies water for all the stock in the different barns.

THE TREES

on the farm, besides two apple orchards in bearing condition, and a large variety of small fruit, consist of cherry, plum and

peach in abundance. Evergreens shrubbery and flowers complete the picture.

THE STOCK

kept on the farm from 1876 to 1879 consists of twenty-five Short Horns of the best families, with the three-year-old bull Mark Twain at the head of the herd. These are kept expressly for breeding purposes. Thirty high grade cows for dairy; twenty three-year-old graded steers for feeders; thirty-six one and two-year-old graded Short Horns; thirty-two head of brood mares and colts, descendents of Sweet Briar, George M. Patchen and Highlander; one Spanish jack; ten breeding sows, Poland China; sixty feeders, with an average of fifty stock hogs; and four hundred chickens.

HOW TO MAKE AN OSAGE HEDGE FENCE.

I grow my own hedge plants, preparing my ground one year in advance of setting the plants. I plant two-year olds. They give strong growth. Plant six inches apart. Prepare the ground as early in the Spring as possible. Have the ground well pulverized. Line out hedge-row and set stakes about 20 rods apart, until the line is completed. In order to get the furrow deep enough, plow twice. Be sure and plow the same way each time, for the reason that the beam side of the furrow to set plants by, is wanted. Before setting out the plants puddle the roots well in mud. This is the great secret in raising hedges. The moist earth being in contact with the young fibers soon starts them growing. I have eight miles of hedge on this farm and I never reset one rod of it. Three men and one plow team can put out one mile in one day. It is very important to set deep enough to cover up the yellow bark; don't bank the earth around the plant, but have the ground after setting perfectly level. Do not cut the tops below the thorns, for in cutting so low all the live buds are cut off, and the plants will grow unevenly. One can not begin too soon to cultivate. Keep down all the weeds and stir the ground well, for the osage plant needs a great deal of moisture. Keep stock from browsing or walking upon the hedge row.

To lose one's work, as some do, plant hedges and give no attention, and wind up saying "I don't like that kind of fence." Cultivate well for two years. Third year mulch, and give no more attention until the fourth year. If the hedge has been well "tended," it is now ready for "laying down." First, trim up the plants from six to eight feet, leaving nothing but straight poles. Check the plant near the root. Lay down at about an angle of 45 degrees. Every four to six feet, leave one for a brace. Trimming can be done safely from the 10th to the 20th of June; then trim from October to April. Very bad for the plants to trim in August, as it cuts the life of the hedge, and the next year there is not enough sap to fill the branches; the result is a great lot of dead-wood. Give the osage a fair trial, and I contend from my own experience that it is the most economical, the most durable, and the most ornamental fence in existence.

MY METHOD OF FARMING IS ROTATION OF CROPS.

Winter wheat is one of my main crops, well adapted to our soil, and when properly cultivated will yield large returns. I always plow my stubble and spread from four to six loads of barnyard manure per acre—more if I can get it. Then harrow and roll. I use the drag and work the ground down fine and solid. About the first of September, I drag and roll again, which completes the work, and the ground is ready for the grain drill. I commence sowing about the fifth of September. Sow three pecks to the acre. Sow the Fultz wheat. My harvest in 1879 was as follows: 60 acres, 35 bushels per acre, 2,100 bushels, machine measure. Some portions of the field yielded as high as 47½ bushels. I grow two crops of wheat on the same land. I seed with timothy and clover. I sow the timothy and clover with a drill in the Fall. The following March I sow red clover; this remains in meadow four years, cutting the hay for stock and pasturing. Red clover is one of the best fertilizers and excellent food for stock.

CORN, THE KING

of crops, is all consumed upon the farm. I plow my corn land in

the Spring, as early as possible. Generally turn over the clover and timothy sod, and in the Winter manure it with eight loads to the acre. I use a three-horse riding-plow. Plow eight inches deep, harrow well, and plant about the first of May. I use the check rower and plant in rows four feet apart each way. Cultivate first with square harrow before the corn is up. The object is to destroy all young weeds. I then use the roller to keep the ground solid and moist. As soon as the corn is large enough, say four inches high, I put in the plow and never stop cultivating until the corn is laid by. I never use the cultivator, I prefer the plow and roller. My corn will average 80 bushels to the acre, 70 acres=5,600 bushels. I feed all my corn ground. Brother farmer, do you ever sell corn at present market value, 34 cents per bushel? I say no! My corn is worth 68 cents per bushel to me on my farm by feeding to good stock, such as horses, mules, beef cattle, dairy cows, hogs and sheep. In the first place

I KEEP THE BEST STOCK.

It costs no more to raise a good animal than it does to feed a poor one. I feed ground corn with wheat bran, in water. I keep all stock under shelter in stalls. I feed four quarts of meal to each grown animal twice a day, smaller stock in proportion, with hay, corn fodder and wheat straw as a change. In keeping the stock warm they eat less and thrive in Winter just as well as they do in Summer. Each grown animal will raise one hog, and now comes

THE GREAT SECRET.

All the stock are fed on the same plan. All are fat and ready for market the same time. The hogs clear gain, while the farmer has a fine lot of manure, worth one dollar for every load, to put on his land. Brother farmers, I contend that, one year with another, the farmer will realize just double the market value of his corn fed in this way, and have the pleasure of making first-class beef for export, and realize the highest

price. Therefore I claim corn is king in the State of Illinois for the working farmer.

IN BREEDING SHORT HORN CATTLE

and grades, there is a great source of profit if properly done. I do not believe in feeding Short Horns for "show animals," and calling them breeders. I keep my breeding animals in good growing condition. I let the calves run with the cows for four months and then wean them. I feed corn meal and wheat shorts with some hay and corn-fodder. At from nine to twelve months old they are ready for market as breeders. The bulls readily command $100 each. I never sell my heifer calves. If they are not good breeders, I have them spayed and run into beef. I find in crossing the Short Horns with the high grades and scrubs the greatest results. The cross makes well formed animals, and at the age of three years will weigh from 1,400 to 1,600 lbs., and this by feeding the roughness of the farm with a small amount of grain.

DAIRY COWS.

I keep thirty cows for the dairy and breeding purposes. I raise all the calves. Let them run with the cow two weeks, then take them off and feed on skim-milk and corn-meal and shorts, with pasture in the Summer, and hay or corn-fodder in the Winter. My cows average 170 lbs. of butter each.

30 cows, 170 lbs. of butter=5,100 lbs. at 25c.	$1,275 00
30 calves at $20 - - - - - - -	600 00
	$1,875 00

In Summer my cows run on good blue grass clover and timothy pasture. No grain fed in Summer. In Winter I feed corn meal and wheat bran. Four quarts to each cow with an allowance of hay and corn fodder. My cows are all well kept in a warm stable in stalls, with chain around the neck. I churn with power.

BREEDING AND RAISING HORSES.

I use well bred mares and a high bred stallion to get good roadsters. I keep three mares for this purpose. I do not

work my mares for three or four months after they have foaled. Give them good pasturage and no grain. In this way I am sure to breed every year, and my foals are ready for the showring and take the first premiums. I wean my colts at five months old, feed them oats and wheat bran, two quarts each twice a day, give good run of pasture, and stable them at night. I feed very little grain in rearing a horse, just give him enough to keep him growing. Break him to the halter at six months old, commence to harness and drive at three years old, and am ready for the carriage at four years old. My horses sell freely from $150 to $300.

MULES.

In breeding and raising mules I keep three brood mares and use a well-bred Spanish jack. An experience of thirty years teaches me that to grow large, compact, well-formed mules, with good action, you must have the very best bred mares. Give them good pasture and no grain. At five months I wean the foal and feed two quarts of oats twice a day. Run them in the pasture in the day, and stable at night. Commence haltering them at six months old, and handle carefully. I have raised mules for profit. Never sold a mule less than $125, and as high as $250 each. I always aim to raise large, compact, well-formed animals. My mules always take first premiums when exhibited at the fairs.

MEMORANDUM OF RECEIPTS FOR 1879.

Winter wheat,	60 acres,	35 bushels -		2,100 bushels.
Corn,	70 "	80 " -	-	5,600 "
Oats,	10 "	40 " -	-	400 "
Hay crop,	75 tons,	1 ton to the acre,		75 tons.
Apples,	500 bushels.			
10 large young mules,		average each -	$150 00	per head.
4 young road horses,		" " - -	225 00	"
20 fat steers,		" " - -	60 00	"
60 fat hogs,		" " - -	12 00	"
4 Short Horn bulls,		" " - -	100 00	"
30 calves,		" " - -	20 00	"

SALES.

5,100 lbs. of butter, at 25c. per lb.	$1,275 00
Hay	250 00
Poultry and eggs	150 00
400,000 osage orange plants, at $2 25 per M,	900 00
500 bushels of apples at 50c. per bushel	250 00
Total.	$2,825 00

TOTAL.

Sales	$2,825 00
Stock (on hand)	5,320 00
Grain (on hand—value estimated)	5,900 00
Total	$14,045 00

IN CONCLUSION.

I have all the necessary machinery to run a well regulated farm. I never sell corn at the market value, when I can feed to stock and more than double my money. I never burn straw or corn stalks. I convert them both into manure for the benefit of the farm. I have never bought one bushel of corn for feeding purposes since I have been on my farm. I never bought a ton of hay since I mowed my first meadow. I never bought one pound of butter. I never hired any one to do what I could do myself. All the improvements on the farm have been made from the sales of the products of the farm. This once so-called worthless piece of land has rewarded me beyond my most sanguine expectations. I was not over-stocked with money when I purchased my farm. It is true I had some capital, but I had something better. God, in His Providence, had seen fit to give me six boys and three girls, and a first-rate wife. Remembering the old saying, "He that would by farming thrive, must either hold the plow or drive," I did both, and am now reaping the reward. The boys are nearly all grown. Two of my sons have each farms of

their own. I have four sons at home, two daughters married and on farms, and one daughter left. Now, brother farmers,

HERE IS THE SECRET:

We all worked, used economy, and had patience. My motto was—a thing well done was twice done. No hand-to-mouth work with me. It was my aim to educate my boys for the farm, and in so doing I gave them every encouragement when quite young. I would give them a colt or a calf—and the increase. I considered it one of the best investments a boy could have. It teaches him how to make a dollar, and then how to save it. If he earns it, he knows how the dollar was made and he has the value in his mind. This is the plan I have pursued with my boys in making my farm. I am proud that I can look about me and see what I have done. All the crops on my farm for years have paid large profits, and the farm is now in a higher state of cultivation than when I first broke it up.

AARON BUNN,

CLAY CITY, CLAY COUNTY.

Corn Culture—Shelter for Stock—Self-Feeder—Profits Come in Regularly—Hogs—Never Sells any Corn—Wheat Culture—Tame Grasses and their Management.

HOW SHALL I MANAGE IT TO PAY THE BEST?

I have a farm in Stanford Township, Clay County, Illinois, containing five hundred and four acres. Now the question comes, How will I manage it to make it pay the best? The time was when we raised lots of corn, a little wheat and a little hay; but times have changed—we must watch every thing. Now we must have plenty of pasture, plenty of hay, all the wheat we can put in right and take care of, and a little corn. Our land is rolling prairie, clay soil. Then corn would grow with but little attention, but now it takes a good farmer to raise

it. On my own farm I aim to keep two-thirds of the land in grass, wheat and hay, the balance I use for pasture.

CORN.

I raise fifty acres a year, I used to raise one hundred and fifty acres. I now aim to plow land that has been idle, or wheat-stubble for corn. I try to have my land plowed as early in the Spring as the season will admit. I plow from eight to ten inches deep. I want the ground dry and warm, and well pulverized before planting. I plant in checks. I use a two-horse planter. Mark first plain, then turn with the planter the other way, drive straight, and have a good careful dropper. Commence to plow corn as soon as it is three inches high. Plow as close as possible. I use a two-horse cultivator with fenders. Plow every ten days. I have found it pays well to plow corn when it commences to tassel. I then use one horse with a single plow. This plowing will always pay.

I SHELTER ALL OF MY STOCK.

They will do better, and will not eat as much. No. 1 is the horse barn. Under the same roof there is always plenty of corn and hay without going outside. Barn No. 2 is 50 feet by 80 feet; this I use to stall-feed cattle. I tie the cattle up. The barn is all floored with 2-inch plank. My hogs follow my cattle and do well. This barn has been built nine years. I have fattened cattle in it seven times, and I always have been well paid. I keep our milch cows in this barn. Barn No. 3 is for stock cattle. It is 56 feet by 80. It is

WHAT WE CALL A STOCK BARN.

The loft is 7 feet high. Has a rack from the ground to the loft lengthwise clear across the barn. I feed hay, straw and fodder in this barn. Then I have a shed for all of our farming implements. These barns are all built on a cheap plan.

I do not pretend to be a real practical farmer. I do not know what every bushel of wheat, oats or corn costs me, but I do know at the end of a year what my profits or losses are. I never have had a loss on a year's labor. My profits have come

in very regularly, and have been over one thousand dollars a year ever since I commenced to farm and raise stock.

I KEEP PLENTY OF WORK HORSES.

I do not raise them purposely to sell. I never aim to work a horse to death. A horse can be worked on a farm until he is 8 or 9 years old; then I sell him. I keep from 80 to 125 head of cattle all the time, and of all ages. I sell at from three and a half to four years old. As soon as I sell I buy again, young cattle, of course. I keep as many hogs as I have feed for, and often

I BUY LARGE QUANTITIES OF CORN

and feed. I am always governed by the price of corn and stock, as I never aim to do any thing that does not pay, and it does not pay to buy corn to feed when corn is high and stock is low. I always feed all the corn; I never sell any.

WHEAT.

I have found by experience that one plowing is the best for wheat, unless we have had a great deal of rain. Our land must be well pulverized and packed, and drilled about the middle of September. If we seed our land when it is too loose it freezes out badly in the Winter. I have worked this farm for fifteen years. I have had two partial failures of wheat. One on account of the army worm in the Fall; they ate it off and it died. I drilled again in October; the wheat did not get much root, and it was killed in February and March. The other failure was from an extremely dry Fall, when we had the fly. Except these two crops, I never raised less than fourteen bushels of wheat per acre, and from that to twenty-five and a half bushels per acre. I plow for wheat the last of June and through July. I plow in lands about seven steps wide, and am careful to open all furrows so that the water will not stand on the wheat. I plow five inches deep. Sow the Mediterranean wheat, the best for our prairie land, as it is the most hardy.

THE TREATMENT OF GRASS AND PASTURE LANDS

should be our chief study, as therein are the greatest profits for the least investment. It is strange to think that grass will grow under water, and especially tame grass. We mostly seed our wheat land with grass, sown in February on the wheat. It does well, and is a great saving of time and labor. If there is any crop I pay particular attention to it is wheat, therefore this land is in good shape for grass. I mow the grass land four years, then pasture three, and then break the sod. I have two reasons for this: First, it keeps up a rotation of crops; second, the ground has become more or less foul by this time, and has run out. The leading grass of this country is red top. We sow a great deal of timothy and some clover, but they will not hold a sod like the red top. We sometimes cut two and a half or three tons to the acre. Red top makes more pasture than either clover or timothy.

A. G. CALDWELL,

ISLAND GROVE, JASPER COUNTY.

A Stock Farm—Most Successful With Grade Cattle—Corn—Wheat—Fruit—Fish—Thorough Systematic Under Drainage only Needed for the Full Development of Jasper.

Island Grove, Jasper County, is situated 15 miles northwest of the county seat, Newton. My farm proper contains 600 acres, which I use mostly as a stock farm. I have other adjacent farms where I raise most of my cereals. My farm proper I have mostly in grasses, viz.: clover, timothy and red top.

CATTLE.

I have about 100 stockers on my farm, and about the same number that I am feeding for the market.

My mode of handling these stockers would suggest itself to any feeder who proposes to feed for profit. I keep my animals constantly in a growing condition, by having a full diet

of nutritious food adapted to the growth of the young animals. Fat is an unwholesome product of the young, of all species, but the breeder who allows stock to stand still or not gain steadily in flesh, without feeding to fatten is losing sight of his own profit. The practice of starving stockers in the Fall season, that one may have the more feed in the Winter and Spring months is, in my opinion, saving at the *spigot* and letting out at the *bung*.

After my stockers reach the age of say 30 months, I then begin feeding corn, Summer and Winter, attending them closely until they leave the farm. I feed in troughs and keep an abundance of fresh water. My cattle put on in Winter months from 2 to 3 lbs. per day; when on grass and corn from 3 to 4 lbs. per day,—have reached 5 lbs., though rarely.

I have been the most successful in feeding grade cattle. I prefer natives mixed with the Short Horns. A good yearling steer is cheaper at $15, than an inferior one is at $8.

The dairy I make no specialty of. My cows are good quality of grade, bred to the Short Horn, giving me the best stockers and feeders.

HOGS.

I prefer the Poland China and Berkshire, as they are the breeds that are best adapted to our climate, and put on flesh equal to any breeds I have tried. Breeding of fine hogs I have never practiced, although I think it would be profitable in our section, as it costs but little to make a shoat, say the first 100 lbs., and then sell for breeder. My stockers are fed by following the cattle. I use two lots, keeping the cattle one day ahead of hogs. The last two months of feeding, keep them entirely to themselves. My pork costs me on an average 2½ cts. per pound.

CORN.

I generally cultivate 200 acres each year. I use the best plows that I can buy. Plow my ground from 4 to 6 inches deep, then harrow until very fine, getting the ground thoroughly pulverized before planting. In an ordinary season I plant in the first half of the month of April, then tend well

while small, and I rarely fail to get from 50 to 60 bushels per acre, at a cost of from 20 to 25 cents per bushel.

WHEAT

is fast becoming one of our most renumerative crops. I have been most successful when I plow my ground in the last half of June, giving ample time for the ground to undergo a state of decomposition (plowing shallow, which has proven best in our county). I then commence preparing the ground the last half of the month of August, by harrowing and rolling until thoroughly pulverized and packed. Then in the first half of the month of September, I drill north and south, if practicable, draining all water off by opening the dead furrows and places where water might stand; after this is done, I seldom fail to get a paying crop of wheat.

FRUIT

has paid well. Apple and peach trees I cultivate when small, passing over them carefully Spring and Fall to clear them of borers, which are destroyed by being cut out or followed with a small wire.

GRAPES

(Concord) occupy one-fifth of an acre, which I cultivate as I would a garden, allowing nothing else to grow on the land. I train the vine on posts and slats as high as my head, pruning in Spring before the sap rises. From three-fourths of the above land I made 225 gallons of wine, making a yield of 1,500 gallons per acre.

FISH.

I have on my farm a pond for the purpose of furnishing water for stock, made by putting a dam across a ravine, and constructed so as to let off the surplus water without cutting out the dam. In the Fall of 1879 a seine was drawn in this pond, resulting in the catching of as fine cat and buffalo fish as there is in any of our rivers. How these fish came there I do not pretend to say, but they are there, and in an abundance. I am satisfied that any varieties will do well in these ponds, and all may have fish at little or no extra cost.

POULTRY.

I have never made a specialty of raising the different

distinct breeds, but on the other hand often cross my chickens, as in the crosses I think I get fowls better adapted for all uses. I save our early Spring pullets for layers the following Winter, as this is the season that eggs are scarce. Early pullets, the following Winter after they are hatched, are the proper age for good layers; this adhered to, with proper care and feed, there will never be a lack of eggs in Winter season.

DRAINAGE.

I have not experimented any in underground drainage, as my farm is rolling enough to dry sufficiently by open ditches. There is not one farm in twenty but needs draining to bring it into a higher state of cultivation. I venture to say that every wheat field would produce a larger and finer crop if properly drained.

I think it may be truthfully said that our county furnishes as large an area of equally fertile lands as any other in the State. The only thing needed for the full development of its productiveness, is a thorough and systematic surface and under drainage.

C. CROUCH,

BELLE PRAIRIE, HAMILTON COUNTY.

Pioneer Farming in 1821—*Bear and Deer in Abundance—Panthers and Wildcats— The County Now One Vast Winter Wheat Field.*

My farm is situated in the north part of Hamilton County, Illinois, about the center east and west, and consists of four hundred acres—two hundred and twenty in a good state of cultivation, remainder in unenclosed wood land. It was originally heavily timbered for this part of the State. The walnut, sassafras and mulberry stumps many of them remaining with me, although mostly cleared and put in cultivation for forty or fifty years, my father having settled on the same in

January, 1818. I was born on the place in 1821, and with the exception of about two years have resided thereon my whole life. My father was a stock grower principally. Hogs and cattle were raised in the woods, except for a few months in the Winter, when they were fed and cared for. When there was no market for hogs, we raised corn, rye, oats and wheat. After clearing, we generally raised two or three crops of corn, broadcasting rye among the corn for pasturage, feeding the sheaf to cattle followed with hogs, and raising only a sufficient quantity of wheat to supply the local demand for flour or seed. We cut with the sickle at first, and afterwards with scythe and cradle, mowing our small meadows with the scythe and gathering the hay with the fork and rake.

This country at that time was almost a wilderness, inhabited by squatters who settled in the timber near the creeks and large branches, and cultivated generally a few acres of corn. They beat their corn in a mortar, or a hole in the ground, or a hole in some solid stump near their dwellings (made frequently by burning). They used a spring pole with the butt end staked to the ground, the center resting in a high fork like an old-fashioned well-sweep, the pestle an upright pole taking the place of the rope and bucket and having a pin through the lower end to serve as a hand hold for working up and down. The corn in the mortar was thus reduced to meal; or when soft enough was grated. Bear, deer, turkeys and squirrels were found in abundance in their various haunts as game. Panthers, wolves, catamounts, foxes and wildcats were abundant enough to destroy pigs, sheep, geese, and occasionally a calf. Our clothing was then made from cotton, wool and flax and from the skins of wild animals fashioned according to the ability, industry or fancy of the wearer. Most families lived on corn bread, hominy, venison and bear meat, sweetened with honey found in trees in the woods. Very little money in circulation until about 1834–6. My father by industry saved sufficient money by 1831 to build the house I now live in, probably the second brick house built south of the Ohio and Mississippi railway, and east of the Illinois Central. The

first one was built by Robert Peeples, at Shawneetown, prior to 1825, in which Gen. Lafayette was entertained on his last visit to the United States, in June, 1825. In my boyhood my father drove his cattle to Nashville, Tenn., Huntsville, Ala., and Louisville, Ky., to market, and slaughtered his hogs at Shawneetown, where they were either sold or packed in a flat-boat and marketed to the planters along the Mississippi river and its lower tributaries. This much I have said concerning the country and markets.

My house, as originally built, was a two story brick of four rooms, cellar full size of the main building, a one story porch in front, and a one story kitchen at north end, with porch covering cellar door and under which I dug and cemented a small cistern for washing purposes. I have since removed the old kitchen and built one two stories high, constructing in front of it and the main building a two-story porch, which includes the cistern and cellar door. My barn is frame, 44x54 feet, with floor 31x34 feet, a part of which forms the gangway through the barn; the stabling taking up the remainder of the ground. Hay mows above and on each side of the gangway. I feed all stock kept in the barn from the floor. My grain bins are on the ground floor of the barn; my corn cribs are a lean-up against the north end, with an entry between it and the main barn, floored on a level with main floor, and a gangway between grain bins, connecting with entry in front of corn crib doors. My horses and mules are kept generally in the barn; also the milch cows, which are good grade cattle, bred out of and from the best Short Horns from Ross County, Ohio, and the blue grass region of Kentucky. I do not keep many, and am very much troubled with calves from poor bulls running in the range. I use horses and mules for work animals; mules the heaviest and best I can procure. My horses, good roadsters, are a cross between the Morgan and English draught horse, Morgan prevailing, making animals of fair size and good action. I have for a few years kept a small flock of sheep, Southdown crossed with natives and a few Merinoes, and am

now breeding Cotswolds. They are a success, and almost indispensable as scavengers on the wheat and oat fields, to keep down weeds and grasses that spring up after harvest. I break wheat lands as soon as practicable after stacking and hay-harvest, and begin sowing first of September. Yield per acre from twelve to thirty bushels, according to quality of land, time of preparation, and kind sown, and varied by the season. Have used since their invention reapers and mowers of many kinds. Am now using the Empire Combined, manufactured by Siberding in Ohio. I use the dropper in wheat and oats, and the mower in grass and clover. For plows of steel, I use the Peoria and John Deere Clipper; of cast iron, the Pittsburgh and chilled plow, by the Gale Manufacturing Company, which I conceive to be the best plow in use for Fall breaking, considering lightness of draught and thorough work.

I occupy the farm as a home of comfort and freedom from restraint and town annoyances, preferring an equality in the country to mediocrity in the towns. My orchards are of select fruit, but quite neglected, although furnishing abundant fruit for myself and neighbors. My hogs are Poland China crossed, with an admixture of the whiter breeds, Chester White being the base; not raised with profit, however, on account of so-called "hog cholera." My bees are the common American, and only a few hives kept to furnish honey for domestic use; keep them in the Langstroth and common hive. My vineyard is too young to be profitable, being only three years old, but a good, healthy growth of selected varieties. Hope to make wine and fruit enough for my home use.

The Skillet Fork of the Little Wabash is the only stream of any size near me; it abounds in the native varieties of fish, which are taken by all the devices known to fishermen.

Butter and cheese are only of domestic manufacture, there being no creamery in the county, nor dairy as understood by the public.

In poultry we have the old Dunghill, Dominick, Buff Cochin, Black Spanish, etc.; the ordinary gray and white

goose, the swan goose, ducks of almost any grade or color, and white, yellow, and black turkeys; only kept on the farm as an incident, and sold when over-stocked.

Our lands are a light colored loam, with yellow or red clay sub-soil, mostly timbered in this county; in Wayne on the north about one-half prairie; on the west, Jefferson and Franklin, each about one-third prairie; Saline on the south, nearly all timber; White on the east, about one-sixth prairie, generally rolling. In the north part of this county, which for a prairie country is quite hilly, it is well adapted to the production of all kinds of grain or grass, and is surpassed for fruit-growing by few counties in Southern Illinois, the apple, peach, pear, quince and plum growing in perfection and profusion.

Our climate is quite temperate, but subject to sudden changes of temperature, the country north to the lake being almost an open plain. With the exception of some bilious fever in unacclimated persons, sickness is almost unknown. It is one of the best counties in Southern Illinois for rearing and fattening stock; for dairymen or any other farming enterprises.

Our inhabitants are a hardy, robust people, bred from the plebeian class of the Southern States, crossed with German, Irish, and Eastern Yankees.

The St. Louis and Southeastern railway, running from St. Louis to Evansville, enters the county in the northwest corner, the Shawnee branch going out at the southeast corner, and the Evansville to the east. Near our east line is run and operated a branch of the O. & M. R. R., formerly the Springfield and Southeastern, and on the south, near the line, the Eldorado and Carbondale. They are so located that any citizen of Hamilton County can reach a station on some one of the several railways in less than ten miles.

Last year one-half million pounds of tobacco were produced in the county, but our fine wheat crop of two years ago has almost stopped tobacco planting, and the region is now converted into a vast wheat field. Commencing its general culture in the season of 1878, this county produced nearly

one-half million of bushels in 1879, and it has now one-third more sown. With much better preparation of the land, and earlier sowing, we confidently expect to sell one-half million of bushels the next year, in the early market, to supply the European deficiency, and then we will be happy.

SAMUEL PRESTON,

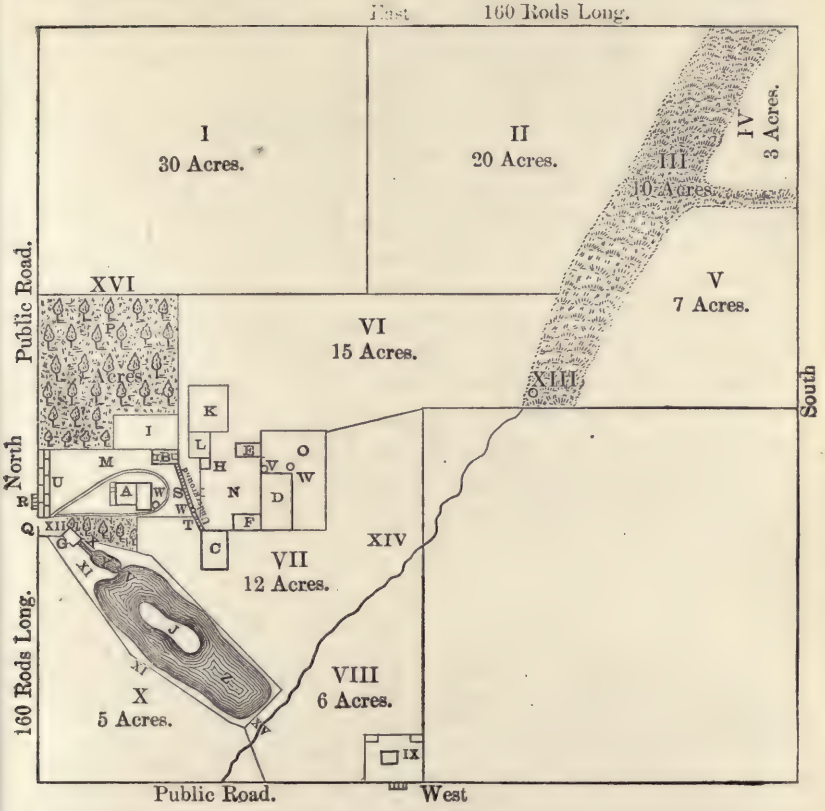
MOUNT CARROLL, CARROLL COUNTY.

"Preston Prairie Settlement"—The "Grout" House — Cost of Raising Grains — Uses Cistern Water for Horses — Sheep Special Favorites — Management of the Flock — Artificial Fish Culture — Orchards—No Big Farms, But Big Farming—A Beautiful Country.

The plan gives a good idea of the fish-ponds in connection with my buildings. The land (without the improvements) seen above the highway was originally a part of my father's estate. He died in 1850, and his farm passed into the hands of strangers. My father and I came here in February, 1836, staked the first claims, cut the first timber and built the first cabin in this (Mt. Carroll) township. It has ever since been called the

"PRESTON PRAIRIE SETTLEMENT."

My house was built in 1851. The walls are "grout," made hollow by a device of my own, with a new and I think a better plan of arranging the boxes, which was published in the *Prairie Farmer* some time afterwards. But Mr. Wight, who was then editor, held grout houses in contempt, which he expressed in the following language: "Condemn me to a log cabin, but deliver me from one of those damp, rickety, grout iceries." It is a sufficient reply to such an aspersion, on my part, to say that in twenty-eight years in my family averaging eight persons there has been but one death, that of my mother at the age of eighty-one, and for the last sixteen years we have not required the services of a physician. The



REFERENCES.

I. Plow field.
II. Plow field.
III. Grass land.
IV. Plow land.
V. Plow land.
VI. Timothy Meadow.
VII. Pasture.
VIII. Pasture.
IX. School House.
X. Pasture.
XI. Pond bank.
XII. Butternut Grove.
XIII. Spring head of Cedar creek.
XIV. Cedar creek.
XV. Outlet of lower pond.
XVI. Chestnut trees 25 years old, from seed. Bear nuts annually.

A. Dwelling house, 26x36. Addition 10x31.
B. Granary and corn barn, 20x24. b. Scale, 4 ton.
C. Corn and grain, 22x28, and machinery store house.
D. Hay and grain, 38x48.
E. Sheep shed, 16x48.
F. Sheep school, 16x48.
G. Fish hatching and creamery, 14x28.
H. Hog Pen.
I. Garden.
J. Island.
K. Stack yard.
L. Hog yard.
M. Door yard.
N. Sheep yard.
O. Cattle yard.
P. Orchard.
Q. Front entrance.
R. Steps.
S. Cistern conductor.
T. Cistern conductor.
U. Stone wall.
V. Outlet of Upper pond.
W. Cistern.
X. Race.
Y. Upper pond.
Z. Lower pond.

walls are seemingly as good to-day as they were the year they were built.

FARMING IMPLEMENTS.

Since 1860, I have used a Double-Michigan and sub-soil plow for sod; for many years a steel beam stiring plow; and for the past two years a three-horse sulky plow. I use a section Scotch harrow, and an Iowa seeder and cultivator for sowing grain. In 1879 I went back to the primitive way of sowing wheat in standing corn by hand, putting it in with a one-horse Moline cultivator. I plant corn with a Keystone, having Barnes' check-rower attachment. Cultivate corn with a two-horse walking plow. For cutting grain I have used one of Atkins' self-raking reapers for twenty-five years, and it is still in working order. I use a McCormick self-binder. For cutting grass I have used the Hubbard mower for sixteen years; it still does good work. In stacking hay I use a derrick and a Palmer hay fork. For the past seventeen years I have done my threshing with Emery's two-horse thresher and cleaner, run with tread-power. I also use that power to grind feed and saw wood.

I estimate the cost of raising grain, delivered in the crib and bin, at $7 per acre, exclusive of the use of the land. I have raised mostly corn and oats for several years, and sell about one-third of the crop. Feed the rest to horses, cows, hogs and sheep; mostly to sheep. The raising of winter wheat here for the past five years has been a grand success, variety, Odessa. It is a spring wheat also. The spring-sown is considered best to sow in the Fall, and *vice versa*. Our millers are in love with it.

OF HORSES

I usually keep from five to seven. My present stock is the progeny of a half Morgan mare that I bought fifteen years ago. She is now twenty-two years old, and neither she nor her descendants have ever been sick a day, except a slight attack of the epizootic, which swept over the country a few years

ago. They are very spirited, seldom need urging, and I attribute their good health in part to using cistern water.

SHEEP.

Of all farm stock, sheep are my special favorites. Not only for profit for the least labor bestowed upon them, but for their gentle and quiet ways. I began about twenty-five years ago with thirty Merino ewes, brought here from Ohio. Improved the fineness of the wool by purchasing full blooded rams of French, Spanish and American Merinoes, and increased my flock to about 600. But the war creating a demand for coarser wools, and Chicago becoming a mutton market, I bred my Merinoes to coarse-wool bucks, and now have a flock of a yearly average of about 175, averaging ten and one-half pounds of wool, and weighing at the beginning of the feeding season, exclusive of lambs, about 150 pounds average. I feed in the open air, in racks sixteen feet long, one foot wide, and three feet high, having a tight plank bottom, raised four inches from the ground, and two boards on each side and end, eight inches apart. Nail to a 2x4 post at each corner and at the middle. A 2x4 two feet long is nailed at the bottom of each pair of posts, upon which rests the bottom plank nailed fast to keep the box from being turned over by the wind. In a snow or rain storm, turn the rack bottom side up, and put the sheep under cover.

ARTIFICIAL FISH CULTURE.

How I made my ponds: The embankment at the lower end of the pond is made by putting in a grout wall of water-lime, sand, gravel and stone. I dug a trench as deep as I could conveniently and wide enough for a man to work in. I then drove hard-wood two inch plank into it a depth of three feet and filled it with grout to the surface. I then ran it up as I would in making a grout wall for a building to within two feet of as high as I wanted the embankment. Laid down tile to let the water run through while making the wall and embankment. The embankment is thirty feet wide at the base, ten feet high, and ten feet wide at the top. The

grout is to prevent muskrats and crawfish from digging through the bank. When the pond was ready to fill, I closed the outlet through the tile with a few bushels of grout. The outlet from the pond is made by imbedding a large flat rock in water-lime mortar, its front edge resting upon the grout wall, with other bed stones extending through and over the embankment; the side walls are then built of stone resting on these bed rock, a cap stone is laid across and the whole covered with earth. A wooden frame is made like the inverted letter ∩, bedded partly into the side walls. A groove is made on the inside of the upright pieces, to receive the screen to prevent the fish from escaping. The water in the lower pond is from one to eight feet deep. Several thousand of California salmon, from one to two years old, are now in the pond, and are doing well. There is also a smaller pond shown in the plan, between the lower pond and the hatchery, where the young salmon are kept until six months old. The water in this pond is about three feet deep. I have stocked this pond with brook trout. My hatchery, in the basement of the building, is capable of hatching 200,000 fish at a time. It is also used for a creamery in the Summer. Temperature of water, 50° at all times. The upper room is of grout, resting upon a stone basement, and is used for a tool house and repair shop. Several hundred tons of ice were taken from the large pond last Winter, by farmers and others from several miles around.

MY EXPERIENCE WITH ORCHARDS.

In 1843 I set out my first orchard of about fifty trees. The ground had a southern slope. The trees were seedlings, and set two rods apart each way. In 1846 I began another orchard (shown in plat) on ground with a northern slope, putting them also two rods apart. In this orchard I had, up to 1856, about 100 trees. The borers were quite troublesome in both orchards, but the most so in the orchard with a southern exposure. Our prevailing winds are from the southwest, and as the orchards had no wind-breaks, the trees, as they grew, had a leaning to the northeast; just the right position for the trunks to get sun-scald. The Winter of 1856-

57, was a severe one, extending pretty well into the Spring months, destroying the larger part of the orchards in the country. My first orchard had not a healthy tree left (not one now living), and of my second orchard the larger part were killed. In 1859 I re-set my second orchard, planting my trees one rod apart each way and leaning them to the southeast. I planted an osage hedge around the orchard, and set Lombardy poplars on the west side as being the quickest growing trees to form a wind-break. I now have an orchard of about 400 trees, large and healthy, and never lack a good supply of apples and some to sell. My time for pruning is the month of August; never in Winter or Spring. As the limbs begin to show signs of decay by bending, I cut them off, and take out, also, the weaker trees. My trees are so dense that but little vegetation grows under them, and the atmosphere therein is so cool and humid as to be unfavorable to the propagation of noxious insects. I have about half a mile of osage hedge on the farm, and about one mile of rail fence, some of which has been in use forty years and is yet sound. As fast as it decays I replace the fence with three boards and two barb wires. I have about 500 red cedar posts on the farm. Am now re-setting some that have been in the ground for thirty-three years, and find them as sound as ever.

CONCLUSION.

Our settlement is not noted for big farms, but for big farming. I think we are the peers of any in the State. We are on the upper edge of the prairie belt, and one mile north of my farm begins the lead ore regions, extending north several miles above Galena. Cedar creek (so named from the many trees of red cedar that once adorned its banks) soon after leaving my farm enters a deep gorge, with limestone ledges on either side rising perpendicularly about forty or fifty feet, and runs a distance of three miles to its confluence with Carroll creek. This creek, also, has similar and more magnificent scenery in its longer and deeper gorges, and in addition to cedar, double rows of towering pines adorn and crown its brink for several miles.

GEORGE W. ENDICOTT,

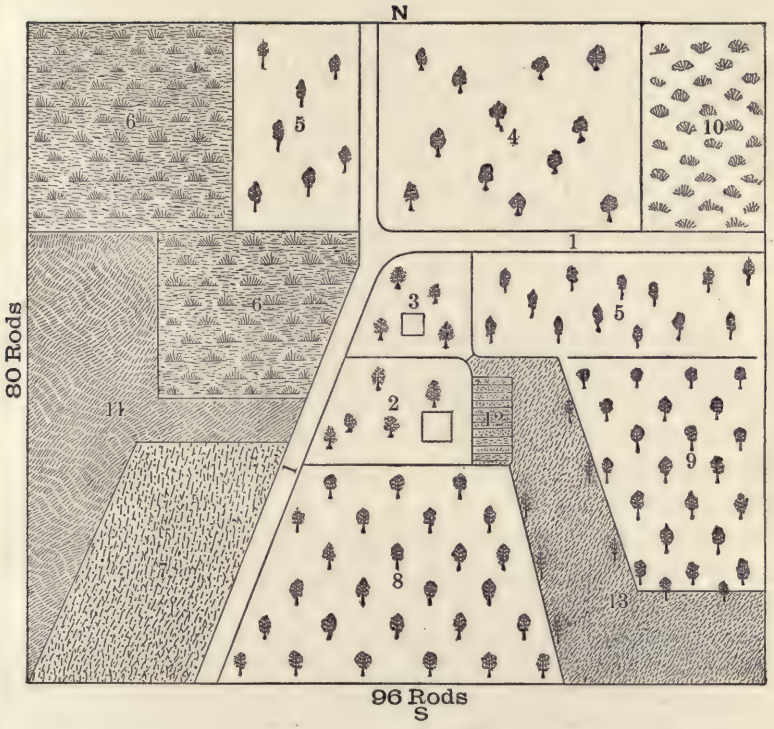
VILLA RIDGE, PULASKI COUNTY.

Apple Orchard—Trees Thoroughly Cultivated Five or Six Years—Pear Orchard Planted on Level Ground the Best—Crop Sure and Profitable—The Vineyard—The Main Vine Should Grow Free—Cultivate Thorough but Shallow—Whitewash a Great Help to the Vines—Strawberries—Plants Set in Squares—Worked by Horse Power—Peach Orchard—Fruit Gathered by Hand—Sweet Potatoes—Farm Implements—Result—Fair Profit on an Improving Property.

MONOLOA FRUIT FARM

is situated about three and one-half miles from Villa Ridge on a high tract of land called Dutch Ridge, extending northeasterly toward the Ohio river. The farm contains forty-eight acres, mostly rolling. Forty acres are cleared and planted to fruit. The remaining eight acres have been cleared of the under brush and sown to orchard and blue grass, and used as a park. The house is a large, square, two-story, hip-roofed building, with large and well regulated cellar. The barn is one of the cottage pattern, hip-roofed, with a large ventilator. The other outbuildings are commodious. Along the county road are planted pecan trees for shade. The cleared land is planted as follows:

Six acres in apple trees,
Five acres in standard pear trees,
Five and one-half acres in Ives' seedling grape vines,
Three acres in peach trees,
Five acres in strawberries,
Five acres in sweet potatoes,
Four acres in meadow.



1 1 — Streets. 2 — House grounds, with native forest. 3 — Barn lots, with native forest. 4—Park, with native forest. 5 5—Pear orchards. 6 6—Vineyards. 7—Strawberries. 8—Peach orchards. 9—Apple orchards. 10—Vegetables. 11—Meadow. 12—Kitchen garden. 13—Pastures, set all around with chestnut trees.

The remainder is in pasture and house grounds, except the kitchen garden.

THE APPLE ORCHARD

contains four hundred well-shaped trees, all in bearing, and of Lawver, Rome Beauty, Ben Davis, Buckingham, Smith Cider, King of Tompkins County, May of Myers, Early Harvest, Red June and Limbertwig varieties.

The trees are from seven to ten years old, all well shaped, headed low and pruned but very little.

Among the good keepers I place the Lawver and Limbertwig first. The other varieties in my orchard ripen too soon in the season.

The trees are thoroughly cultivated for five or six years, when the ground is sown to clover and let run. I have grown apples since my farm was opened, and believe them to be an unprofitable crop in this region.

THE PEAR ORCHARD

contains seven hundred trees, all standards and mostly Bartletts; only about one hundred are old enough to bear. In the old orchard I have a few Howells, Clapp's Favorite, Sickle, Beurre de Anjou, Flemish Beauty, Bloodgood and Belle Lucrative.

Fruit growers generally wish to plant a pear orchard on a northern slope, but I prefer level ground for all fruit trees, planting none over the brow of a hill. My trees are planted in rows twelve by twenty feet, rows running north and south. In planting this way the object is to make each tree shade the trunk of the tree before it in the row. The trees are planted at one year from the seeding and grafted and grown where they are to stand permanently. The cultivation of the tree is most thorough for four or five years, when the ground is sown to clover and mowed twice each year, the growth being carefully placed under and close to the trunks of the trees, as a mulch. Nothing in the shape of hay is removed from the land. The earth around the trees is very rich and mellow. The trees are somewhat conical in shape, but they are never

pruned in root or branch. They do not look as well as trees thoroughly trimmed and pruned, but therein lies the success of pear growing in this region. In allowing them to branch from the ground the trees become hardy and healthy, and the blight never attacks them. Among the varieties of profitable pears for this section are placed the Bartlett, Howells, Clapp's Favorite, Sickle and Bloodgood. The crop is one of the surest and most profitable of the tree fruits.

THE VINEYARD,

next to the pear orchard, I place as the most profitable. The vineyard contains 3,500 vines, nearly all of the Ives seedling, of which about one-half are in bearing. The plants are placed 8x8 and trained to a single stake, those that are now in bearing. I have found by experience that the main vine should grow free, and not wound around a stake, as at every turn around the stake I find the harbor of the insects and bugs that prey upon the sap of the vine. More are found in these crevices than under the bark of the vine. The fruit of the vines that are attached to the stakes is grown at the spurs, which are allowed to swing loose. My reason for growing grapes in this way is that in the ordinary way the foliage becomes so dense and heavy as not to allow a current of air to pass through the vine, which in my opinion is the cause of the grape rot. The vines are pruned as early as the weather will permit. When the frost is out of the ground the cultivation begins, and is kept up until the fruit begins to ripen. The cultivation is most thorough but shallow. In most vineyards the vines are set seven by nine feet, but as no ground is gained and the shape is irregular besides, I have set all my vines eight by eight. My manner of planting is to take a double plow with team and throw two furrows, one each way, then plant in the bottom, placing the main roots in the direction you wish to cultivate the deepest, and if in the Spring partially covering the plant; but if in the Fall, after placing the roots in proper shape, I take a large double plow and team, and throw two furrows entirely over the young vines, covering them for the Winter.

In early Spring I am careful when the dirt is taken away not to disturb any of the little buds. The young vines are afterwards trained to a single wire trellis, placed on the tops of the stakes between the vines, so that the fruit will be grown on the spurs, which are trained horizontally on the wire and not fastened to the stake. In training the vine in this way there is no place for the insects to harbor, and then the rough bark of the vine can easily be stripped off, and the main vine whitewashed, which is a great help to it. This wire trellis is placed high enough to admit of plenty of room for the cultivation, which is done by mules. In the pinching-back season great care is taken to preserve the most healthy of the young shoots, and in thinning care is taken to leave the fruit clusters distributed as evenly as possible on the entire vine. In thinning I pull off one-third of the clusters, using the hand instead of the scissors. The rot has not been bad in my vineyard for the last four years. The grape crop is surest of all fruit crops, and always finds a ready market at good prices.

STRAWBERRIES.

About five acres come into bearing every year. In planting the ground is thoroughly plowed with a large double plow and team and harrowed well in the Fall. In the Spring the ground is well mellowed with a heavy harrow and leveled. Then it is checked off three feet each way (either with a wheelbarrow made for the purpose or a log chain) and two good and healthy plants set at each cross. A few days are allowed for the plants to take root, when the cultivation begins. It is kept up once a week until about the middle of August, when they are allowed to cover the ground with young plants. At first the plants are cultivated both ways, but soon the runners are in the way, when they are turned in the direction in which the row should be formed and worked only one way. The work is mostly done by horse power. One or two good hoeings is sufficient where the harrow or cultivator is used on the ground once or twice a week. Before the work ceases, and after a solid matted row is formed, the runners are kept

cut off by the rolling coulter placed on the side of the cultivator. By putting the plants in squares the work can be done mostly by horse power, thereby reducing the cost of labor, and it is better than the old method of hoeing all the time, as too many plants are injured with the hoe. In the different strawberry beds I find the Charles Downing, Wilson, Crescent Seedling, Monarch of the West, and the Endicott Seedling No. 2, a very large, juicy berry, of which I am the originator. In my experimental bed I have a dozen different varieties, of which a seedling found in the northern part of this State by A. B. Robinson promises to be one of the favorites.

The crop is generally good. The fruit is sold in Chicago and the Northwest.

THE PEACH ORCHARD

contains 350 trees just coming into bearing. The trees are all healthy. There being no peach crop this year the trees were pruned back very close, only leaving the short stubs of the main branches, which at present make a fine appearance, the limbs having made a rapid growth after the cutting. The curculio is watched very closely, the trees being bugged every morning, and the insects that are caught are at once destroyed. The varieties are Amsdell's June, Hale's Early, Pickett's Late, Early Crawford, of the larger proportion, with several other kinds of less importance. The fruit is gathered by hand, as is all the product of the place, and great care is taken to preserve none but the perfect fruit.

SWEET POTATOES.

This crop is raised every year in the peach orchard, mainly for the cultivation of the young trees. I think there is no vegetable crop equal to the sweet potato for thoroughly cultivating the soil, as it requires frequent working, shallow and not deep; and then in the hot season of August the ground is shaded by the vines, which keeps it moist and cool. The plants are set in hills 2½ feet each way, one plant being set in each hill. The planting season is from the first of May to the fifteenth of June. The cultivation is done by horse

power, with exception of one good hoeing. They are dug before frost and stored in the sweet potato house, and marketed in Chicago during the Winter months. The average yield is 150 bushels to the acre, with an average of $1.00 per bushel net profit. The crop is a profitable one and sure, as they require dry weather, which we generally have in the latter part of the Summer.

The meadows and pastures furnish all the feed for the stock kept on the farm, except the grain which is bought in the Fall of the year. The stock consists of one span of good working mules, one carriage horse, two cows and five or six pigs.

The farm implements are the best of their kind, but there is no expensive machinery used, as there is no need of it. All the tools, implements and stock are provided with good shelter. Twelve years ago this place was a dense forest. Since that time I have cleared it of nearly all the stumps.

The farm is well fenced with rails, with the exception of the fence along the county road, which is board. Complete accounts are kept of all expenditures and receipts, the labor put upon every crop and the income from the same.

Since I bought this place it has paid for all the improvements put upon it, and for the last three years it has paid a net income of 10 per cent. of $10.000, after the taxes and all other necessary expenses have been paid.

This is a fair profit on indestructible property which is all the time improving.

SAMUEL DYSART,

FRANKLIN GROVE, LEE COUNTY.

Mole Drains Not Durable—Forestry—Soil and Grasses—Mixed Husbandry—Sowing Salt on Wheat Lands Highly Recommended—Rotation of Crops—Manner of Seeding Grass Lands—Gray Willow Hedges—Orchards—Home—Live Stock—High Feeding.

THE PINES STOCK-FARM.

I was born and brought up in Huntingdon County, Pennsylvania. My father was a farmer, who visited this country in 1848 and entered a large tract of government land, of which I was assigned 320 acres as my portion on which to build up my future home by my own industry. In March, 1855, then in my 21st year, I located on my present farm, which at that time was open prairie, without any improvement further than a comfortable dwelling house, and 60 acres of breaking which had been done the previous year. A few years later I bought the west half of the southeast quarter of section 14, as shown on the plat, which made 400 acres, as the farm is at the present time. The land is moderately rolling, with sufficient elevation to give good drainage. The sloughs marked on the plat, when I first located on the farm were boggy, and had water in them most of the year, but by the use of the mole ditcher and the cultivation of the adjacent land they became dry, and now they are all tillable or good pasture land. The large slough passing through the eastern side of the farm has a fall of over 20 feet in the mile. Up to the present time I have depended on the mole drains and open ditches, but the former are not durable on account of crawfish filling them, and the

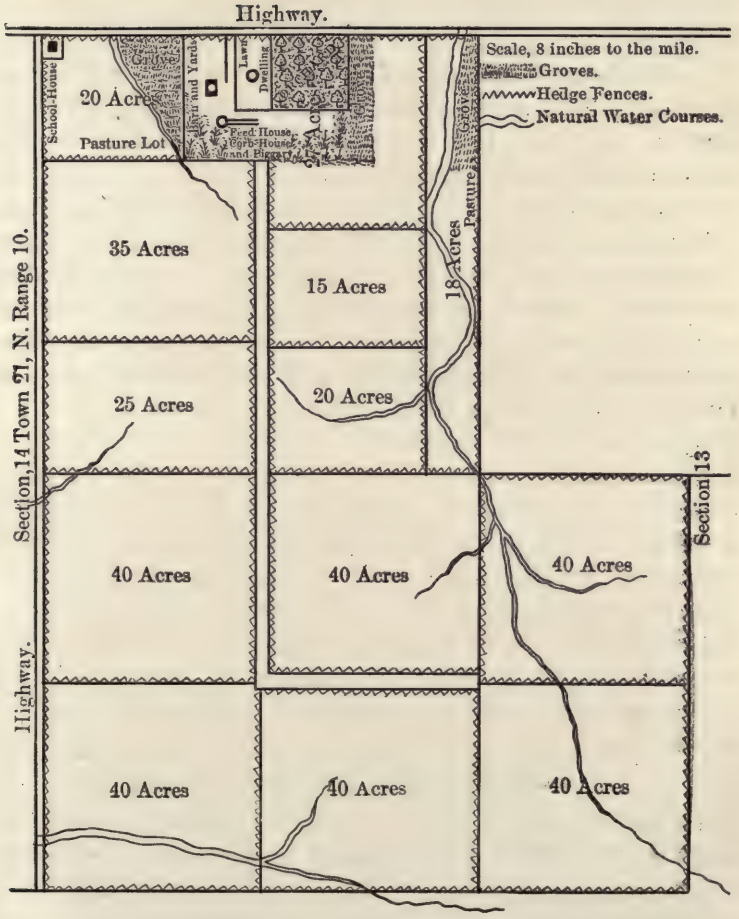
latter are inconvenient in tillage. During the next few years it is my intention to put

TILE DRAINS IN ALL THE NATURAL WATER COURSES

and low land. With the elevation of the farm every square foot of land in the tract can be made productive for any kind of crop. The soil is the rich loam common on our prairies, underlaid with a porous clay from ten to twelve feet thick, mixed in the lower strata with gravel stones of various sizes. Below this is a blue clay, which varies in thickness from four to eight feet. This rests on a bed of gravel, which is filled with water that rises in wells from four to six feet and is inexhaustible. There is no hard pan apparent in the formation, and no rock is reached above the gravel mentioned. Very few boulders have been found near the surface. Any where on the farm, at or near twenty feet deep, an abundant supply of good cold water can be had, which is brought to the surface by wind power when wanted.

FORESTRY.

Realizing the value of protection from the winds of the open prairie, the planting of trees and groves received my early attention. In addition to planting an orchard of the hardiest varieties of fruit trees, I planted around my dwelling hundreds of different varieties of evergreen trees—but mostly the American white pine. These have now grown to the size of from twelve to sixteen inches in diameter, and besides being attractive to the eye are a perfect wind brake. A grove of five acres of black locust was planted, which grew to be handsome young trees, but were all destroyed by the borer. Thousands of poplars are planted in groves, but they too have nearly all been destroyed by the same insect. The gray willow has proven to be the most hardy and rapid grower of that class of trees I have planted. Soft maple and ash have also done well. At present there are groves and shelter belts in different parts of the farm, and I have reaped great benefit by the protection of crops from the winds of Winter and storms of Summer. My stock do not suffer from the cold of Winter


Highway.
Scale, 8 inches to the mile.
Groves.
Hedge Fences.
Natural Water Courses.
School House
20 Acres
Pasture Lot
Garden
House and Yard
Lawn
Dwelling
Orchard
Feed House
Corn House
and Piggery
35 Acres
15 Acres
18 Acres
Grove
Pasture
25 Acres
20 Acres
Section 14 Town 27, N. Range 10.
Section 13
40 Acres
40 Acres
40 Acres
Highway.
40 Acres
40 Acres
40 Acres

when outdoors, and the winds do not penetrate the buildings like those exposed to the force of the current. The benefit of shade in pastures during the heat of Summer for stock is an important item in the profit thereof, and one which is overlooked by many farmers of our country.

SOIL.

The natural resources of the land in this section of country are favorable to any special branch of farming. The rich surface soil and the underlying porous subsoil combine the essential qualities for luxuriant vegetation, and all kinds of cereal crops, with proper cultivation, produce a large yield. Of the grasses, clover and timothy make a heavy growth, producing abundant crops of hay, and usually a good yield of seed when grown for that purpose. It also stands a drouth well, which makes it favorable for pasture purposes. When the country was first settled, June grass was not found here, but in a few years afterwards it made its appearance along the roads or wherever the prairie sod was destroyed. It rapidly increased, until of late years our pastures, when not frequently broken and cultivated, soon become thickly sodded and other grasses disappear. The effect of the introduction of this species of grass on the soil has been favorable, giving it more body and holding the moisture to the surface longer during the droughts of Summer. When well turned under by the plow, it will produce a heavier crop of corn than either clover or timothy sod, and small grain produces well as a following crop.

I HAVE FOLLOWED MIXED HUSBANDRY

since the beginning of the farm. The growing of grains and the raising of stock have been kept on such ratio to each other that a great portion of all grains raised have been fed on the farm, and no hay or coarse feed has ever been sold. For a number of years after breaking the prairie sod, but little attention was paid to the rotation of crops. All produced well in succession for years. The custom followed by most of the first settlers of the country of burning the straw on the farm,

to get it out of the way, was not followed. That class of farmers held with derision the idea that it would ever be necessary to manure what they termed an inexhaustible soil. My idea, which time has proved correct, was that the rich surface soil formed by decaying of grass for ages would become non-productive by cultivation without rest or manure,—therefore from the first all offal was returned to the land as fast as possible. From the beginning it gave satisfactory results on the new land, apparently domesticating the soil to the various crops. In a few years adjoining land fell off a large per cent. in the amount of production, while I had the satisfaction of realizing that mine retained nearly the original fertility. The exhaustion of the soil in one direction by the continuous cultivation, without rest or refreshment, was first seriously felt in the failure of the wheat crop. The looseness of the new soil was unfavorable to the wintering of Winter wheat, which was abandoned entirely for Spring wheat, but this in a few years began to decline in yield and quality until the crop was generally considered an unprofitable one, and was nearly abandoned. On land that was manured and cared for in the usual manner, it failed to ripen as in former years. This led me to the conviction that an element in the soil had been exhausted, which rest and barnyard manure only partially restored. By the experiment of our best farmers, it was found that

SALT SOWN BROADCAST ON THE YOUNG PLANT

restored the lost qualities and brought the soil near its former standard. The effect produced is that wheat grows firmer in the straw, is free from the watery substance that produces rust, and that it ripens slowly as in former years, thus giving the berry time to mature. Parasites attack sickly plants as well as animals, and it has been demonstrated fully that chintz bugs do not attack wheat on which salt has been sown, as soon or as badly as that which is grown without it. During the past few years, I have not omitted to sow on my wheat from a bushel and a half to two bushels of fine clean salt per acre, and since following that rule I have not failed to raise from eighteen to

thirty bushels of good marketable wheat to the acre, and I have as yet discovered no bad effect from the use of salt on the growing of other crops. If I were to venture an opinion on the result, I would say that all crops are benefited by the use of salt. By cultivation, seeding to grass and pasturing, the black prairie loam of the new country is fast changing into a firmer soil on the surface, and either the mold is wasting from the surface, or the clay is coming up from below, changing the former into the latter, which is annually reducing the depth of the dark-colored soil. Recently Winter wheat has stood the frosts of Winter, and produced good crops in this section of country. The top soil is losing its greasy nature when wet, and does not run together in Winter like when the country was new. From the visible change going on we are led to believe that Winter wheat will become one of the staple crops, and a change in the manner of cultivating the soil will take place. Deeper tillage will be required, and more frequent seeding of the soil to grass in order to keep it from growing gristly and hard.

ROTATION OF CROPS.

As the plat shows, my farm is subdivided into fields of forty acres and less. The system of rotation of crops now followed as a rule is, on breaking from a sod to take two crops of corn in succession. The cultivation of these two crops effectually kills the sod. Then a crop of oats is raised, the stubble of which is given a coat of barnyard manure and turned under in the Fall. The next year a wheat crop follows, and the land seeded down to clover and timothy mixed. My manner of seeding is as follows: If Spring wheat has been sown the ground is dragged, then seeded, and again dragged. I mix the seeds in equal parts and sow ten quarts to the acre. In twenty successive years of seeding in this manner I have never failed to secure a good set of grass, which prevented weeds from springing up the first year as is usually the case with thin sowing. In this way my land rests in grass for meadow or pasture one-third of the time and it retains its fertility well.

HEDGES.

Osage hedge is used mostly for division fences and is kept cut back to four feet in hight. The pruning is done in early Spring or in September; midsummer trimming having the effect of killing out the stocks and spoiling the hedge. On low land and along the highway I have gray willow hedges, which I have made very effective against stock in the following manner: When sufficient size to form a strong stub they are cut off three and a half feet from the ground and a single barb wire is stretched along the row fastened every few feet by staples into the tops of the stubs. The willow sprouts out and grows rapidly over and no beast will push through it. Once in six or eight years the willows may be cut down to the wire and furnish a large amount of wood. Objection is found against the willow for a fence on account of the shade, but my experience is that the protection to the crops within the enclosure from high winds more than compensates for the damage, without taking into consideration the value of the wood. The willow absorbs a great amount of water and thus benefits low land, and the roots do not exhaust the adjoining soil more than the osage.

By my system of changing crops I have a large amount of permanent pasture, which is much improved by a top dressing of manure once in three or four years. Top dressing of meadow, however, injures the first crop of hay following, by causing the grass to grow coarser, more woody, and with less saccharine matter.

MY APPLE ORCHARD

comprises three hundred trees of the best improved varieties for the climate, placed in rows two rods apart. The ground was prepared before planting by being raised with frequent plowings into ridges two feet high, where the trees were set. The corresponding depression between the ridges gives good surface drainage. Since the trees have come to full bearing, every third year the orchard has been heavily manured, but not plowed. It has also been my custom for years to

keep a number of young hogs in my orchard in the fore part of the Summer and also in the Fall. They work under the trees, destroying the grass and all insects that burrow in the ground and prey upon the trees and fruit. The result is I have not missed a single crop of fruit, and the trees are generally healthy and vigorous. I am not troubled with codling moth, nor have I seen any appearance of canker worm, while my neighbor's orchards have been much injured within the last two years. The early Richmond cherry is hardy and has been a regular bearer with me.

MY HOME.

Believing that nothing adds more towards making home attractive to its occupants, and has a greater influence in developing the finer qualities of one's nature, than a liberal outlay of money in building fine dwellings, and adorning the surroundings with the beauties of nature, I have expended money freely in that direction, to render my dwelling worthy of the name—home, a place to which my children are proud to have their associates come. There is a sad neglect among the farmers of our State generally, in this respect—a neglect which often has the effect of enticing farmers' children to the towns and cities, where they see handsome residences in sad contrast with the surroundings of their own homes on the farm. When home is made to correspond with the meaning of the sweetest word in our language, then those who grow up under its influence will ever revere the place,—be sorry to leave and glad to return to it.

LIVE STOCK.

From early youth I had a fondness for fine stock, especially cattle and hogs. In my boyhood days, when looking at the pictures of such, I resolved that some day I would own and raise that kind of animals. Twelve years of patient industry, in preparing my farm and erecting suitable buildings, passed before I commenced the business of realizing these boyhood dreams. In 1867 I made my first purchase of thoroughbred Short Horn cattle and Berkshire swine, which laid the foundation of my present herd, many scions of which have

gone into different parts of the western country. My selections were made with a view to purity of blood and animal merit combined, avoiding all extremes of fancy and shunning the vile influence of speculation. Believing from actual demonstrated facts and my own observations that Short Horn cattle had more good qualities to fit them for transforming the product of the soil into human food, in the form of milk and beef, at less cost than any other breed of the species born, they were selected as being the most profitable to raise. Berkshire swine were chosen on account of early maturity and fineness in quality of flesh produced.

I have always advocated what many term

HIGH FEEDING,

from the fact that I am convinced that all the improved breeds of stock are the produce of select breeding, coupled with extra feeding. They are the result of man's enterprise, and nothing is due to natural origin. With time and these influences, a breed of any of the species of domestic animals may be made to produce a defined type for any specific purposes. Hence feeding and breeding for certain improved results go hand in hand together. Separate them and the end in view is never reached. Plenty of feed and warm stalls in the Winter with rich pasture without any grain in the Summer, has enabled me to keep my stock in thriving condition all the year. Avoiding feasts or famines, they are healthy and profitable. I have tried the cutting and steaming of feed for stock in Winter, but have abandoned it, because the benefit does not pay for the extra labor, when the cost of the grain is taken into consideration. I grind the grain and feed it in the meal, the hay as grown, and I find my stock do fully as well on a slightly increased quantity.

MY HOGS

have warm and dry sleeping rooms, but have the liberty of an open lot at all times for exercise. I feed dry corn and slops, and wood and coal ashes are placed where they can get them if they desire. I have raised hundreds of hogs during the last

ten years, yet I have never had a case of so-called hog cholera on the farm. All hogs not sold as breeders, or retained on the farm for that purpose, are marketed at from nine to ten months old.

THE HONEY BEE.

has always been a favorite, and has been kept for years, not for profit further than home use but for a fondness I have for working with them. In 1865 I purchased a number of pure Italian queen bees and introduced them into the hives. They did well until 1870, when, by a disease similar to what is known as dead-hood, I lost them all. Since then the black bee only has been kept. Our climate I do not consider favorable for the honey bee. There are too many extremes in the temperature and in wet and dry weather. I have used various kinds of hives, and my convictions are that the slat hive has many advantages for working with the bees, but they are not as good in the cold of Winter as the common box hive, on account of too much vacant room.

POULTRY.

A number of varieties of the barn-yard fowls have, at different times, been kept. The Asiatic breeds suffer from the colds of Winter and have recently been replaced by the Plymouth Rock breed, which are more hardy and better layers, as well as being the favorite at the table. Bronze turkeys have been raised for years and many very fine and weighty ones have been grown, reaching forty-four pounds at two years old. The young males weigh twenty-five pounds.

While giving attention to the breeds of improved stock mentioned, horses have not been over-looked, yet they have not been made a specialty. Of sheep, there is none kept on the farm.

In the meantime, no interest has been paramount to that of the farm itself. Knowing it to be the base upon which the success of the others rests, it has, in all times, been treated in conformity with the view that to raise good stock of any kind requires plenty of food, which can be grown only on a farm which has a rich and well tilled soil.

SAMUEL T. K. PRIME,

DWIGHT, LIVINGSTON COUNTY.

Some of My Methods—Management of Hogs—A Small Flock of Sheep and Their Profit—What Tiling has Done for Me.

BERTHOLLY HOME

stock farm is situated one mile southwest of Dwight, on the Chicago & Alton Railroad. It consists of 246 acres, and is divided as follows: In pasturage and meadow, 80 acres; the grounds around the homestead occupy 24 acres, and the remainder of the farm is devoted to corn and grain. The main idea of the farm is to feed upon the place all the grain that is raised. While there is no purpose to run to any one specialty, yet hogs and sheep are the principal stock raised, in connection with a few cattle. The farm represents the idea of mixed husbandry. I give the facts as they have developed themselves during the past few years.

I look upon all my stock as just so many boilers for the conversion of grain into pork, beef and mutton. Therefore, the first essential is to have cheap fuel and plenty of water to run the boilers.

MY BARNS AND SHEDS,

as will be seen by the plans, are all connected. My feed of all kinds, hay, corn meal and corn fodder, I keep under cover. The farmer does all his "chores" without exposure to the weather. The horses, the cattle, the sheep and the hogs are all fed off boards. No food of any kind is wasted. What one animal refuses another one will eat. Man, food and beast are all under cover. There is enough grass and hay wasted every Winter in the mud to give every farmer in Illinois a copy of *The Model Farms* FREE.

THE PIG PEN

forms a very important feature in my methods, and if I have a weakness I think it runs in that direction. The lumber I

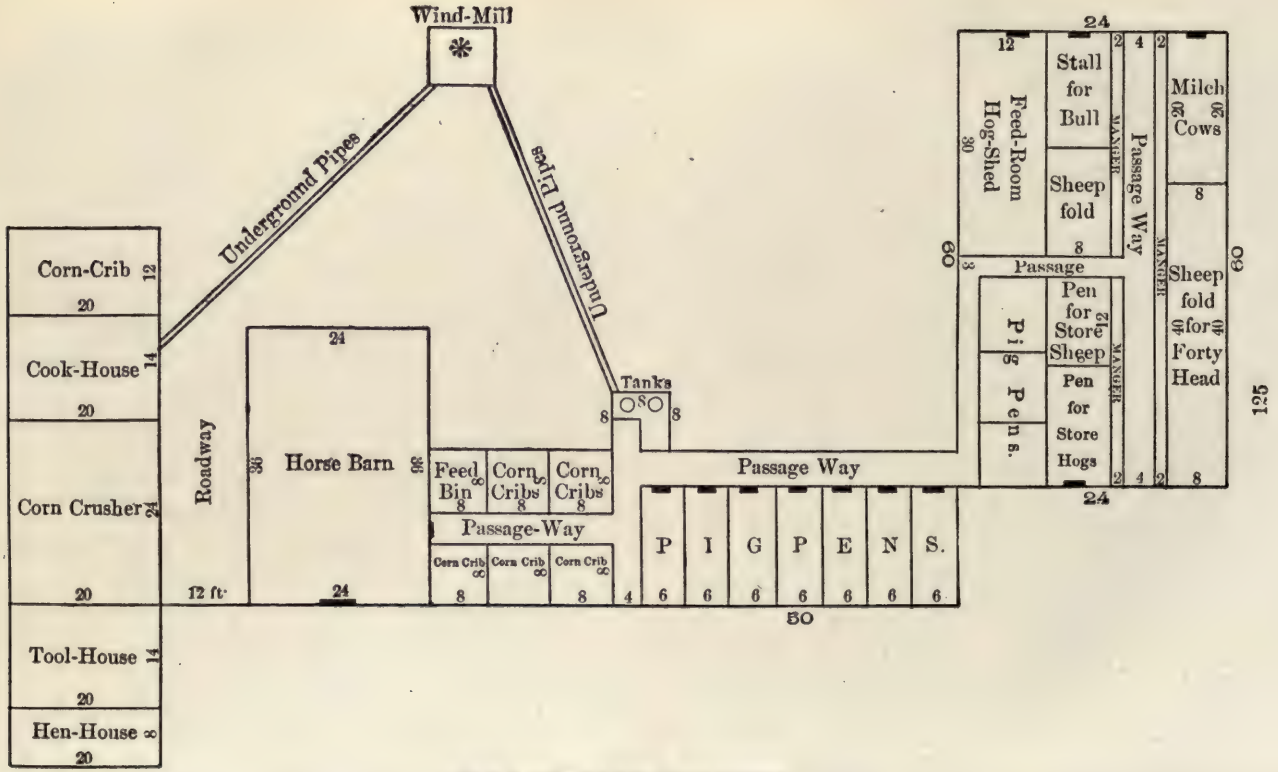
have used, the nails I have driven in my efforts to make a model pen is something appalling. It does not suit me now, but it is better than any thing I have before used. My present pen was formerly a corn crib. It is 50 feet long and 14 feet wide, with a passage-way on one side, three feet wide, which connects with my cattle barn. In one end of the pen are two vats, seven feet in diameter and two feet deep. These vats are supplied by water from a force-pump, which is worked by a wind-mill. The vats are, during the greater portion of the year, kept full of sour food. The corn is ground upon the farm by a large two-horse crusher, and soured. I have found by long experience that corn fed in this manner gives the best results. All the swill made upon the farm is also thrown into these vats. One vat is always ready for feed, and the other vat is always in the process of souring. (*See plan.*)

This pen is subdivided into eight compartments, on every side of which, except where the trough runs, pieces of 2x4 are fastened uprightly, to which, at a distance of 6 to 8 inches from the floor, a 4-inch strip is nailed around the whole compartment,

TO PREVENT THE SOWS FROM LYING UPON THEIR PIGS

when they are throwing a litter. This seems to be a small item, but I have saved many litters of pigs in this manner. Stationary troughs are set into each pen, so that they can be filled from the outside. I use these pens for fattening hogs, as well as for breeding, and they will hold with ease about thirty head. As soon as one lot is fattened, I put in another, and keep these pens full for seven months of the year.

I run about ten breeding sows of the Berkshire stock. My sows generally come in about the first of April and September. The young pigs run with the sows for six weeks, during which time they are taught to eat. They are weaned in a separate pasture and fed either soaked or boiled feed. I commence feeding all my hogs young and old very early. That is, just as soon as the corn is fairly out of the milk. I take them all up and sort them, and put them in pens out of doors



PLAN OF FARM BUILDINGS.

large enough to hold ten or twelve hogs that will weigh three hundred pounds each.

FALL FEEDING.

I cut up the corn, stalk and all, and commence to feed. I do not believe there is a season on the farm when a farmer obtains so much out of his corn crop as when he is able to feed the stalk, leaves and the ears. I invariably commence my feeding season by the middle of July, then again the first of October the hogs are ready for market. This plan I have pursued for a number of years with excellent results. I also plant half an acre of beets to feed, and I consider an acre of artichokes indispensable to the successful hog raiser. The best feed I have ever used for young pigs which have been weaned, or those which have, for want of care, been stunted, is equal parts of corn meal, oats and potatoes, cooked in a boiler holding two barrels. A year ago last Fall I put up fifty young pigs of this description, fed them six weeks at a cost of 1½ cents per day, and sold them at the end of the above time for $150. This experience convinced me that there was no better feed in the world for such stock.

SHEEP.

I have a pleasant experience with sheep in a small way. "Our" flock—for it belongs mostly, if not all, to my son—grew up in this way. A small sum of money, $15, was given him. I added $10. This made $25. We bought eight ewe lambs of medium wool, half Cotswold and with a dash of South Down blood, as handsome and well formed sheep as you would wish to see. Now for the results:

FIRST YEAR.

8 ewes gave us 8 lambs - - -	at $3 00	$24 00
48 lbs of wool - - - - -	20	9 60
		$33 60
Cost of ewes - - - - - - - -		24 00
Value of investment end of first year - - -		$57 60

SECOND YEAR.

14 ewes	at $3 00	$42 00
6 wethers	" 3 00	18 00
14 lambs	" 3 00	42 00
Wool		24 00
Value of flock end of second year		$126 00

THIRD YEAR.

20 ewes	at $3 00	$60 00
6 wethers	" 3 00	18 00
20 lambs	" 3 00	60 00
Wool		46 00
Value of flock end of third year		$184 00

The great profit of sheep is in the small flock. Mine are housed every night from the 1st of November until the following May. I sow every season a small piece of oats, and cut it green just after the grain is well filled. This answers a double purpose. It makes splendid feed for the sheep and gives me lots of "bedding." We have now our flock so improved that the South Down blood predominates. I like the Downs for the reason that with ordinary care they are always fat, and as for the mutton it is the finest in the world. I have gone somewhat in detail with the handling of this little flock, first, for the purpose of showing what the $25 has earned, and, second, to urge every man who owns a farm to keep a "few sheep," both for the profit and the pleasure he will derive in seeing them steadily increase, giving him each year both food and raiment. So far as the cost of keeping is concerned, it is so small in proportion to the profit that I do not give the figures.

TILING.

After a thorough observation and travel all over the northwest, I am satisfied that there is not anywhere a finer or richer body of land than the Grand Prairie of Illinois along the line of the Chicago & Alton Railroad. But it has its drawback. For the last few years wet seasons have followed

each other in rapid succession until, by the failure of crops, many have become discouraged, and thousands have "gone west." Yet my faith in Providence is so strong that I never admit that He made such a rich belt of land that those who live upon it should suffer from poverty and debt, unless owing in a great measure to their own utter neglect of the use of common sense. My remedy for most of the ills to which farmers are heir in Illinois

IS TO COMMENCE TILING.

My attention was more particularly called to the use of tile by frequently observing that in certain localities of the State the crops never failed, houses were good, barns and out-buildings in order, farmers rode in carriages, pianos and organs gave forth their music, silks took the place of calicoes, every sign of prosperity obtained, and there I always found the free use of tile. After much preaching and writing about it, I made up my mind that the accepted time to commence using it myself had come. I forbear, for the sake of the community in which I live, to relate how I was laughed at and what a "useless expense" every one said I was going to. Many said I had "not enough fall;" others, "Where will you get an outlet?" I am satisfied that the day will come in Illinois when we will see the

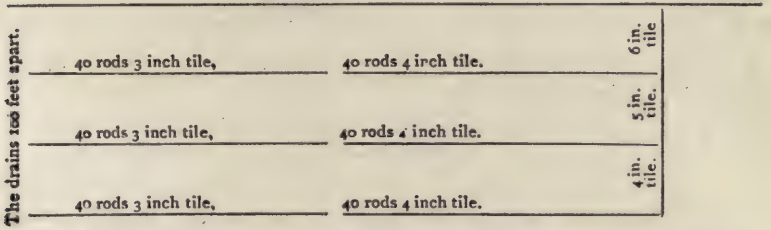
LARGEST SIZED TILES LAID ALONG THE ROADSIDE,

both as a road improvement and into which to connect our farm drains. But first, a word in regard to open ditches. I consider them a perfect nuisance. They cut up your fields, and must be cleaned out every other year to do any good. I have been putting down, one foot below the

BOTTOM OF MY OLD OPEN DITCHES,

a six-inch tile, and filling up the open ditch. It is not the surface water that does so much injury to our crops, it is the water *which soaks into the ground and never leaves it* except by the slow process of evaporation. No more open ditches for me! I have sunk hundreds of dollars in them. I had a

twenty acre lot. For years it was a disgrace to the farm. So low and wet that nothing would grow but weeds and coarse grass. I tiled it in the following manner.


Roadside.
6 inch tile.
The drains 100 feet apart.
40 rods 3 inch tile,
40 rods 4 inch tile.
6 in. tile
40 rods 3 inch tile,
40 rods 4 inch tile.
5 in. tile.
40 rods 3 inch tile,
40 rods 4 inch tile.
4 in. tile.

I ran these tiles through the lowest and poorest portion of the land, commencing upon one side and putting them down 100 feet apart, and at a depth of 36 inches. At the time of putting down the tiles, we were trimming our trees and had a great abundance of branches for which we had no use. I put these branches on top of the tiles. Now what has been the result. Notwithstanding an unprecedented drouth and that my corn had all to be replanted, I have a crop which will go nearly fifty bushels to the acre, upon land which never before produced anything but grass and weeds. I claim that from a good "string" of tile properly laid, a farmer will derive as much benefit in a dry season as he will in a wet season.

THE WIND-MILL.

Every well regulated farm ought to have a wind-mill. There are plenty of good ones and some poor ones. My first experience was with the latter. A good wind-mill is better than the average "hired man." The latter will often shirk and neglect to pump "plenty of water for the cattle," while through rain and storm, darkness and light, the good wind-mill faithfully performs its daily revolutions, and gives method and prosperity to the varied interests of a well managed farm.

ELI UPTON,

MORRISON, WHITESIDE COUNTY.

The Observations of a Life — Corn Culture — Smut, — Black Leg and Foot Rot — Dairying and the Feed for Milch Cows.

WHEAT AND CORN.

I commenced my farm in 1854, which was bought from the State a short time before. My first crops were Rio Grande Spring Wheat, which yielded very fairly. In one good season my harvest amounted to 10,000 bushels of wheat.

My mode of cultivating, after plowing, has been to pulverize the ground with a nine-toothed cultivator, then sow two bushels of clean seed, and, if the weather is dry, roll. I do this work as early as the frost is sufficiently out of the ground. In this latitude our prairies will produce Spring wheat only five or six years. About Winter wheat there is a good deal of uncertainty. I am, like all old settlers, without confidence in the crop, although new comers are often very enthusiastic. I once had a very promising stand of Winter wheat destroyed by a cold, windy November.

Other Spring crops require the same tillage as wheat; but oats require three bushels sown to the acre. Furthermore, I have lost both oats and barley by planting too early ; the grain being tender, is liable to be destroyed by prolonged cold, wet weather, yet these should never be sown late. The corn crop every western farmer knows something about. A good crop generally follows a good stand well tended. But there is more to it. A good three-horse riding plow will turn the ground bottom side up, every thing under, always the same depth. I use three horses averaging thirteen hundred pounds each, and they walk along with ease.

I plant with what is called a check-row. I do not drag before planting, but when the corn sprouts. I once dragged

before planting; cold, wet weather followed, the corn sprouted slowly, and the pigeon grass grew finely and formed a sod. The ground was smooth and I was in a fix, for my drag would not take hold. My first dragging did the mischief, for had the ground been rough, as when left from the plow, I would have had no difficulty.

IN CULTIVATING POTATOES,

I never put but two eyes in a place, as surplus of seed only produces small ones. My mode of cultivating is to remove the two front shovels of a riding corn plow, set the hind shovels the desired width, set a stake and mark out, dropping the seed ten or twelve inches apart. I take off the hind shovels, put on the front ones so as to throw the dirt in, and go astride of each row. By this process the row is left high. When the sprouts are approaching the surface, drag crosswise, which leaves the row perfectly clean, and the potatoes, many of them, in sight. In after plowing throw as little earth as will cover the small weeds, to obviate filling up too much and the use of the hoe. Large fields can be cultivated with little hand labor.

THE BEAN

I manage in the same way. At time of harvest, pull and throw three rows together; drive the hay rack between the rows; the driver stands on front corner of the rack, a pitcher on each side, which saves treading. Rick should be four feet wide, covered with boards or prairie grass.

MANAGEMENT OF STOCK.

I have had thirty-six years' experience in managing stock on a prairie farm. I feed a little dry corn to all animals, when on dry feed. In feeding them fresh corn, one hour in the field at first is long enough, then bring them out at a brisk walk to water, if half a mile all the better, and there will be no cry about the "deadly" smut, which, by the by, is perfectly harmless.

BLACK LEG CAN BE AVOIDED.

This occurs in the Spring when cattle are turned on grass too early; also, in the Fall when cattle are left in the pasture

where there is nothing to eat. Cattle, when fed properly, are never troubled with it.

SHEEP.

In the September of 1863, I bought 500 breeding ewes, of what is or was called common breed. The next Spring I loaded my clip on a hay rack, took it to town, sold it for $1 per pound, amounting to $2,700.

I had 1,400 head when the business went down; had paid high for bucks; held on so long (sold the last of the flock in 1877) that I made no profits.

THE FOOT-ROT.

In the fifth year of my husbandry, I solved this question by selecting a sound sheep and applying the virus thoroughly to the animal day after day, but making no impression. I then turned my attention to the yards, and kept them clean as possible, and for nine years had not one case of foot-rot. Old prejudices are very lasting, but let him who doubts, take the same process to convince himself, which he will do, and I will have one more on my side. Further, I have led a horse through a muddy yard after a prolonged rain, and the horse would rub and stamp his feet as if they were on fire. I have herded sheep on wet pasture to kill out wild grass, which was poor pasture for sheep, but it did not produce foot-rot.

I have written on this subject for the purpose of giving relief to farmers that are troubled with regard to this disease.

DAIRYING.

I have and milk sixty cows, what are called high grade Short Horn Durhams. I think they are the best class of dairy cows for this section of country where corn is cheap. I change twenty per cent. of my herd annually, and it pays. A cow weighing from twelve to fourteen hundred, nearly direct from the milk pail, by three or four weeks' good feeding, when sold to the butcher, will bring a good fresh cow to the dairy and five to ten dollars to her owner. While the little Alderney may make two-thirds or three-fourths more butter—

taking into consideration the amount of feed consumed—when turned to the butcher proves but a "scrub," if I may use the expression. They are too small for beef where grain and feed are cheap. I feed corn meal, with oats or bran, as much as the cow will take and fill herself with hay. I make it a point to give as much grain to a cow as she will eat. When yarded cows will not do well. My cows have produced over $40 in butter. The past year I have raised fifty-five good calves. Give them new milk for two weeks, then give them skim milk. My cows are put in the stable at night, fed grain, then hay; in the morning I feed hay and grain, and turn them into a yard protected from wind. Feed hay in a rack. There is a tank of fresh water always ready for their use.

The sixty cows have produced nearly eleven thousand pounds of butter. My wife has made the butter and appeared to enjoy the work. I have been well paid for the labor expended.

THE NORMAN HORSE.

A horse weighing less than twelve hundred pounds is, in my estimation, unfit for the plow or drag. A fourteen hundred pound horse, well made up, just suits me. I am breeding from full blood or imported Norman. I have one two years old in August whose weight is fourteen hundred pounds; another three months older whose weight is about the same; and one yearling twelve hundred and fifty. These, perhaps, will be more fitted for the drag. The Norman horse is mild in temper, easily broken, trusty, a fast walker, and hardy; his powers of endurance are great.

V. P. RICHMOND,

MORO, MADISON COUNTY.

Prairie Home Farm — Mixed Husbandry — Pastures and Meadows — Grain — Devon Cattle — Sheep — Essex Swine — Fruit — Poultry — Drainage.

PRAIRIE HOME.

My farm consists of 100 acres in two separate tracts; 65 acres comprise the home farm, the remainder lying half a mile distant. It is situated in sections nine and ten, Fort Russell Township, Madison County. The soil is variable, from rich, deep black, to light gray and clayey. When I first began work, there was on the farm what the pioneers called a buffalo or deer lick, a very hard, compact, yellow clay with some saline properties. By dint of bounteous manuring, and deep plowing, no one can point out the place to-day, unless myself, and I with difficulty.

I believe a mixed husbandry is the proper course for farmers in general, and therefore I have carried as much stock on the farm as it would bear, consequently hay and corn have principally been consumed thereon.

My treatment of pasturage and meadow lands has been to hold about 12 acres as a permanent pasture, on which we average a stock of 8 cows and horses and 75 sheep. My reason for permanent pasture is that the older the sod, the more reliable in seasons of drought; and for keeping sheep and larger stock in the same pasture, that one will eat what the other refuses, thereby giving grasses a chance to grow. The droppings of sheep also take immediate hold on the nourishment of grasses, as soon as a dew falls. When the small grain is stacked we pasture the stubble, and the meadows when the grass has started. Meadows need occasional renewing, as in four or five

years blue grass and white clover will begin to crowd the other grasses.

GRAIN.

I am raising grain to some extent on land that I rent. The cost of raising wheat and corn can only be estimated year by year, as the expense is usually more in producing a poor crop of either than a good crop. In 1879 my estimate would be 65 cents for wheat and 12½ cents for corn. In 1878 it was about 80 cents for wheat and 25 cents for corn. Each cost for production less in 1879 than in 1878.

CULTIVATION OF CORN AND WHEAT.

In plowing for corn I usually plow deep, using judgment, of course, about it. Some years a medium depth is best, while in other seasons, trench or double plowing is best. Lay off with marker, and drop by hand or use hand planters when all things are in order for them. When dropped by hand, cover with a plow, follow with harrow (and roller if necessary), harrow again before coming up, and work as fast and often as possible until four or five feet high, then let the corn alone until cutting or gathering. I gather corn with one hand to a team, two rows on the left side of the wagon, and the team traveling on a row previously gathered. Cribbing corn can be done in many ways, but good cribs with open sides and projecting shingle roofs, are best. For wheat early and deep plowing of stubble or sod lands, frequent and shallow cultivation, and September drilling give me the best results. I harvest with a Marsh Binder and Climax Dropper; stack generally, and thresh by steamer when we can not get horse machines. Stack as much straw as our stock will consume.

DEVON CATTLE — HORSES.

I keep Devon cattle. I believe the Devon cow to be *the* cow for small farms, or families. She is always reliable, giving a reasonable flow of milk for a long time, making gilt-edge butter and first rate cheese, besides good milk for the table. If you sell the calves to the butchers, they are better than Ayrshire or Alderney. I believe as much beef can be made

from Devons as from Short Horns with the same expense. My horses are the nearest approach to thorough blood without being thoroughbred. I find a well bred horse of about 1,000 pounds able to do plowing as well as larger and coarser horses or mules. I use thereon a 16-inch plow and go down 9 to 12 inches deep, at an average rate of three acres per day. On the road they are quicker and, what is more to the purpose, are intelligent and reliable.

MERINO SHEEP.

My sheep are principally Merinos. I have been crossing a few with South Downs, to meet the demands of the city butchers. I fancy the Merinos, but would advise no one if favorably inclined to other breeds to grow them; for a sheep breeder will only do well with the kind he best fancies.

ESSEX HOGS AND CARE OF STOCK.

My experience with Essex Hogs is only that of two years, but I believe them to be the *coming breed*. My Winter care of stock is to shelter every thing during cold and stormy weather, tying up horses and cattle, and assorting sheep as their different strength may seem to require. I feed occasionally sulphur, ashes, and charcoal, and seldom have sick horses, cattle or hogs, and never scab or ticks on sheep.

FRUIT.

I aim to have an abundance for home use of apples, pears, and small fruits; but do not try to sell much of the surplus. Eighty cents a barrel for apples will not pay one to neglect the important work of the farm.

DAIRYING

with me is principally for my own use, and to be sure of plenty of good butter. I sell enough, however, to more than supply the house with groceries from an average of three Devon cows.

POULTRY.

For ten years or more I have kept the White Cochin, and I have no reason to object to them. They prove good layers,

good setters, care well for the young chickens, and, better than all else, can take care of themselves after three or four weeks old.

TURKEYS.

I raise only for our own use. Turkeys and flowers, in Spring and early Summer, do not agree, and I like the flowers. I buy a setting or two of eggs in Spring, raise as many as I can and dispose of all of them during the Winter.

MY LAND

is upland prairie, well drained naturally, and not much troubled with long rains. To make it still better we are pursuing a system of

DRAINAGE.

I begin with the hollows for main drains and put in laterals as means and time will allow.

FENCES AND BUILDINGS.

My farm is principally surrounded by Osage hedge in good order. There is some good wire and paling, and some poor fences, and some board fence and common paling fence for divisions. The poor fences will be made better. I have a good farm house; a barn 60x70 feet, in which, in the Winter, I keep from fifteen to twenty horses and cattle, an average of eighty sheep, three wagons and some other farm implements, five hundred bushels of grain, one thousand bushels of corn and about twenty tons of hay. The hay is elevated and carried about the barn so far as practicable by horse power. I have a farm machinery building, in which is stored all the machinery ($700 worth) not in use, for the Winter, and another building for workshop, buggies, and some other common farm implements, all insured in sound Insurance Companies. I have a small grove of Osage Orange for timber purposes, and wish it had been much larger at the first setting of trees on the farm. Around the house there are some dozen varieties of evergreens, some thirty-five feet high or more, besides deciduous trees, among which are Bearing Pecan, White and Black

Walnut trees. For water we are well supplied by five wells, not deep, but strong springs, a stock pond and cistern.

NOXIOUS WEEDS

I do not allow to grow. Cockle burrs, Jamestown weeds, burdock, thistles of all kinds, Indian mallows, and some nettles are destroyed on sight. The horse nettle, bearing a little ball similar to a potato ball, grows on the farm and I know of no way in which to destroy it. The roots are ever-living, I believe, and go further down than any cultivation will reach.

Such is a brief sketch of "Prairie Home Farm," and may the description be of benefit to some one. Where I err in my workings, I advise the reader to profit by the error and do better for himself. Do right yourself, not as I tell you or as I have done.

EDWARD WHITTLETON,

BARRY, PIKE COUNTY.

Winter Wheat and Corn Culture — Rotation of Crops — Manure Spread at All Seasons of the Year — Good Drainage and Hogs.

EVERGREEN FARM,

so named from the number of evergreens scattered around the dwelling of the farm, is situated on the Hannibal and Naples Railroad, one mile east of Barry, and on the Barry and Greggville highway. It contains one hundred and thirty-five acres. The orchard and grounds around the house occupy ten acres; the remainder of the farm being divided into five fields of nearly equal dimensions. The land in this locality is a lively loam, one and a half to two and a half feet deep, underlaid with a non-retentive subsoil of light red color. The main intention of the owner of this farm is to make it a permanent home for himself and his family; consequently most of the proceeds derived

from it have been returned in the shape of improvements, such as building, fencing, and drainage. Wheat, corn, hogs, grass and pasturage have received special attention at his hands; and now I will describe some of the methods by which these have been cultivated, raised, and harvested.

MY MAIN IDEA

in managing these crops being to still keep the farm up to, or near to its original fertility and productiveness, I have followed closely the following rotation.

Beginning with sod, it is plowed in the Fall, if possible, to the depth of seven or eight inches, and planted the following Spring to corn. This is kept in corn three years, then changed to wheat, and run the same length of time to that crop, then seeded down to grass for meadow and pasture. It is then kept down to grass four years, and all the manure, long or short, rotted or unrotted, that can be made is applied to the grass land. This is hauled at almost any time during the season when it will not interfere with the advanced growth of the meadow; the pastures are neither pastured nor the meadows cut very close; the object being to form as fast as possible a heavy sod to be plowed up again for the above rotation. This system of cultivation has kept the farm in a high state of productiveness.

WHEAT

is very often lodged; one year I had twenty-five acres of it on the farm, every particle of which was lodged. It was cut with a four-horse McCormick self-rake reaper, without binding; was picked up from the gavels on wagons with a Foust hay loading machine, and stacked with a derrick. This wheat was sold with only a reduction of five cents from the market price, and yielded twenty-five bushels to the acre. A few failures have resulted from freezing out; but in the main my wheat has done well. The ground is plowed as soon as the crops are removed, then harrowed and rolled until seeding time (which should be in this latitude from the eighteenth to the

twenty-fifth of September), when one bushel of wheat to the acre is drilled in.

THE FULTZ WHEAT HAS PROVED TO BE VERY PRODUCTIVE, hardy, and fly-proof. The cost of putting in sixty acres of wheat has averaged about as follows:

16½ days	Plowing, 3 horse plow at	$3 00 -	$49 50
7 "	Harrowing, 3 horses	3 00 - -	21 00
8 "	Rolling, 2 horses	2 50 -	- 20 00
5 "	Drilling, 2 horses	2 50 - -	12 50
60 bushels	Seed Wheat	90 -	- 54 00
	Total - - - - - -		$167 00
	Cost per acre		$2 70

Twenty-two acres of this were plowed with a three-horse plow. On the same land with same culture, one year's crop (1878) yielded about 1,750 bushels.

CORN GROUND IS PLOWED

as early in the Spring as the condition of the soil will admit, care being taken to avoid plowing while the ground is wet. Horace Greeley's advice is taken when we are plowing for corn, and the plow is put down nine or ten inches deep; the ground is put in good tilth by harrowing. I have not seen as good results as have some farmers, from harrowing small corn. As soon as the corn is up, the wheel double-walking cultivators are used, by changing the plows or cultivators so that the hind shovel will be next to the row of corn; the fenders have to be adjusted to the hind shovel by boring an extra hole in the beam of the plow. The shovels are turned slightly from the corn, and as the result of this the forward shovel breaks the ground away from the corn, making a furrow for the hind shovel to turn its furrow into, and leaving the young corn standing on a ridge. By this method it is hard to cover it up, the clod naturally rolling off the ridge into the furrow, so that the corn can be very closely cultivated at the time that such close cultivation is needed the most; and at no other stage of its growth can it be done so well. After the corn is large enough to stand the dirt, the cultivators are changed back again,

and the dirt thrown to the corn. This treatment has been pursued for a long time and has given the best results in cultivating small corn. The idea seems to me far better than that of employing the diamond plow. My yield rarely falls below sixty bushels per acre.

DRAINAGE.

This soil is mostly dry, still it has seepy or springy places on it. These places are not in the hollows, but on the slope, probably one-third to one-fourth of the distance from its base. Considerable drainage on the farm has been done. Six thousand feet of tiling have been laid, and a pile of it is always to be seen on the farm waiting to be put in when an opportunity presents itself. The ditches are commenced in the Spring, and finished in the Fall; they are staked out at the upper part of the wet places, and a furrow is opened with a strong, steady team; this is done in the fields which are pastured, or in grass. The stock will tramp it down, or it can be harrowed. This is repeated as often as wished during the Summer, and in the Fall the ditches are lined out and the bottom dug out with spades. The bottom is now brought to a perfect grade three feet deep from the top of the soil. Tile are then laid, the last dirt that was taken out with the spade is returned, and tramped down, or a horse put on to make it solid. A few turns with a plow will fill it up. The field is now plowed, and is ready for corn the following Spring. This way of ditching is accomplished with very little manual labor.

HOGS.

The hog-pen is fifty by sixteen feet, with a corn crib ten feet taken off one end. This is made use of for brood sows in the Spring, for fattening the pigs in the Fall, and for feeding in rainy weather. A large loft is above for straw which will hold plenty of bedding for a long time. The pen can be partitioned off for brood sows. Sows drop their pigs the last of March or the first of April. The young pigs are fed on soaked corn and slop, until about three months old; then corn is given them, with pasture enough to keep them growing and

thrifty until the first of September, when they are placed by themselves on pasture and fed all the corn they will eat. In cold weather they are shut up on a lot close to the pen. They are marketed about Christmas and show an average weight of two hundred and fifty pounds.

C. C. BUELL,

ROCK FALLS, WHITESIDE COUNTY.

How to Make a Cheap Cow Stable.

Being compelled to build cheap or not at all, I adopted the following plan, after some preliminary trials. I have my stables three in a row, and a few feet from each other. The front opens toward a spacious yard used for stacking hay, and miscellaneous purposes, this space lying between stables and house. The rear opens into the cow yards. Each stable is twenty-five feet wide by thirty-three feet long, sixteen feet lumber working nicely, without sawing, to construct them. These stables accommodate twenty-two cows each, though if I had large cows, I should arrange for only twenty. They are constructed as follows: Joists 4x4 for corner and side posts, each about ten feet long, setting them into the ground so as to make the stable at the eaves about eight or eight and a half feet high. I arrange for two rows of cows, with the feed alley in center, seven feet wide. In the line of the stanchions, I use 2x6 posts (five of them) extending to the rafters, laying out the plan so that these shall form part of the stanchions, and placing the outside posts to correspond. I board up the outside with common boards, put on horizontally, and leaving space the width of the center alley for double door opening to the front, and also space for a good wide cattle door at each corner of the rear end.

I have a small, low, center door in the rear for throwing out the refuse from the hay or feeding alley. I use such additional

posts for the outside as may be necessary for the strength of the building. I commence at the top of each side to board, using a good firm board for the lower ends of the roof-boards to rest upon, and bank up or dig down at the bottom as necessity requires. I use 2x4 scantling for the ridge pole, adjusting the length of my rafters to roof-boards sixteen feet long, and fitting two supporters between rafters between ridge pole and eaves board for roof boards to rest upon. The ends of the stable are made firm by the siding. The center may be made firm and stable by running a common fence board from corner to corner (thus X) nailing them firmly to the cross ties over head. The cross ties should be arranged with reference to the strengthening of the stanchions, as well as to supporting the floor, or whatever may be put upon them above. The stanchions or the outline of them should go up at the same time as the outside of the building. The proper size for both upper and lower stringers is 2x6 lumber, and the same material is the best for the stanchions themselves. The stringers should be held to the main supports by bolts; the intermediate fixed portions of the stanchions may be spiked. A dirt floor answers well enough for the center, and should be quite full in the middle.

A floor three planks wide does nicely for the hind feet of the cows, and a clay floor is best for the fore feet. The rear portion should be planked, but lower. This stable may be made warm by making a floor over head of old boards, or even brush, and putting plenty of straw above. The sides should also be boarded up with any old material, and the space well filled in with straw, chaff, sawdust, tanbark, shavings, or even dirt, if nothing better is at hand. I find a sled and mule or horse the most convenient for cleaning these stables, hauling my manure entirely away from the building. I have a hand cart with a box rigged on it, and holding four or five bushels, for a feeding cart, running it into the alleys. It freezes but very little in the coldest weather in my stables, and, although the roof is not battened, and the floor over head is brush, the rain seldom comes through—the leakage being absorbed by the straw. I

hope I have not omitted any thing which may be essential to the understanding of my plan. It is designed to be helpful to those farmers who have plenty of *will*, but not plenty of money. I have used these stables several years, and however nice a barn I may ever be able to build, I do not expect to have any which will be more economical of labor.

AMOS M. EBERSOL,

OTTAWA, LA SALLE COUNTY.

Mixed Husbandry — Stock — Grain — Value of Tree Planting — Bees and Honey — Poultry — Tile Drainage.

FLORAL HOME

is a moderate sized farm of two hundred acres, situate in La Salle county, Section Thirty-one, Township Thirty-three, Range Four.

In 1842, the present occupant, then a young man, with a light pocket, but a cheerful heart and a strong arm, and with firm principles of right inculcated by a devoted mother, plowed the first furrow and set out the first tree. The next year a bird came to my nest, which in time brought me six birdlings. They are all grown up, strong and healthy, never a death or a very severe sickness having been known to the family. So it may be said of this locality, it is decidedly a poor place for doctors to locate; it must be recorded, however, that in the early settlement of this county we suffered more or less with fever and ague, when our medical men dosed out the calomel and quinine by the spoonsful.

Floral Home is finely watered, Covil creek, formed by a thousand springs, running through it; hence the water is never scanty or warm, but always fresh and inviting to man or beast. Our wells, also, afford an abundant supply of good, wholesome water. This farm is connected with a magnificent grove which supplies myself and many others with an abundant quantity of fence material and fuel. I was very saving of the

wood for some years, but am now convinced that if it is not wasted, it will grow so fast that a few acres will supply an ordinary farm with all that is needed in this line. I have only twenty-five acres, and have much more on the ground now than I had forty years ago.

Our timber consists of hickory, black walnut, black oak, red oak, white oak, burr oak, basswood, pin oak, cedar, arbor vitae, hackberry, butternut, white and red elm, dogwood, pine, sycamore, cotton wood, etc. The black walnut is rapid of growth, hardy, and vigorous. I have many trees of the latter variety, from seeds planted by myself—bearing fruit for years, and which are now large enough to make ten or a dozen posts. My advice to every man who owns a farm is:

PLANT TREES AND SEEDS, AND KEEP PLANTING.

It is an easy matter to chop down a tree some one else has planted, not so easy to fell one you have yourself planted and nursed for years from a tiny shoot that a dew-drop would bend to a giant that defies the storm.

MIXED HUSBANDRY.

I have not made a specialty of any one branch of farm produce, but have devoted my time to what is called mixed husbandry. This has been the case with most of the farmers of the county. From this stand-point, I give my experience. Producing pork was a remunerative business until the disease known as the "cholera" made its appearance, sweeping off the hogs by the score, and sadly disappointing the hopes of a large majority of farmers. During the last year comparatively few have indulged in this branch, and consequently few hogs have died with the disease.

We feed a few cattle for the Chicago market, but the greatest share of the corn is carried to market.

I have carefully computed the cost of grains produced.

COST AND CULTURE OF CORN.

Corn in the crib costs 29 cts., 3 cts. of this for harvesting.

The average is thirty-seven bushels per acre. I consider it best to plow the ground in the Fall; the stock should not be permitted to range over it during the interval, especially when the ground is soft. I use the sulky plow, and regard it as a grand contrivance. My harrows are the Scotch, but they are twice as large as formerly. I am not contented to do as our fathers did—I must have all my farm implements to correspond. I plant the best yellow dent corn, with an improved Vandivere —using a check-rower. After the corn is planted, I harrow the ground thoroughly, and if cloddy roll it. I also use the improved Black Hawk for cultivation, and usually plow four times.

COST AND CULTURE OF SMALL GRAIN.

I raise but little wheat compared to the amount of corn, and what I do raise costs me sixty-eight cents per bushel. Of this eight cents is for harvesting and eight cents for threshing. I put in Fall wheat as follows:

Plow the ground well; drag, sow, then go over with a corn cultivator. It is an advantage to mulch wheat before the Winter begins, by spreading a very thin coat of manure over it. I sow Spring wheat early on Fall plowing, putting it in as I do the Fall wheat. The harrow leaves the seed too near the surface, hence the corn plow is used. I studiously avoid putting in poor seed or that which is not clean. Wheat averages fifteen bushels per acre. My rye I treat as I do the wheat, this averages eighteen bushels per acre, costing when harvested and in the granary sixty-five cents per bushel.

Oats I generally harrow in, either on Fall or Spring plowing. If the season is dry, rolling improves it. The average yield is thirty-seven and a half bushels per acre, costing twenty-three cents. Harvesting and threshing cost five cents each per bushel.

MEADOWS

I occasionally give a light coat of manure in the Fall, which improves the crop of hay. This treatment I consider also

beneficial for pasture lands. My average crop is one and a half tons to the acre.

STOCK.

The grade Durham is my choice for beef; for dairy purposes I find it difficult to decide between the merits of the Holstein and the Jersey; for mutton I prefer the South Downs; for wool the cross of Cotswolds and Merinos.

HOGS.

I raise almost exclusively the Poland Chinas, and certainly regard them as the best for all purposes. I think it best to give hogs a good clover range, with plenty of clean water and shade during the Summer; but when fattening begins, clean pens, with floors to feed on and good protection from the storm is absolutely essential to the success of all who are engaged in this business.

HORSES.

After seven years of experience in breeding and caring for horses, I have no hesitation in declaring that for speed the Hambletonian, and for labor or heavy work the Clydesdale take the lead. There are other fine breeds in this county, such as the English Coach, the Norman, and Green's Bashaw, as well as others, and they are all useful. It is hard to name the best as we have so many men of so many minds—each believing in his own breed. The principal breeders in the county are S. Dickerman, Streator, E. Hodgson & Co., Farm Ridge, W. Pritchard, South Ottawa, Ed. Lewis, Deer Park.

BEES.

Much of my time has been spent among these industrious insects, that are a wonder to every thinking mind. I have given attention to this branch of husbandry both for the pleasure and profit there is in it. Honey is among the most wholesome dishes any housewife can set upon the table, especially during the Winter season. For forty years I have not been without it.

Bees can be made quite profitable and are by a goodly number in this county. I have only the common bees, though some have used for a time the Italian variety, and those who raise them for sale say they are "far preferable," but the common ones are good enough for me. I have occasionally a bad year for the bees; such an one was the season of 1879. Then they made but little honey, for some unaccountable reason, and hundreds of swarms died. I may safely say fifty per cent. of the bees in this county have either died or will die before Spring. The best patent hive is no protection in such a case.

Bee moths must be guarded against, hence the price of honey is vigilance as well as effort.

FRUIT.

Apples are a necessity in every family; thus all reasonable men who have any land which they can call their own, will plant trees. Many sad mistakes are made with reference to the varieties planted, as some kinds sold in the market are not worth "shucks." Those who plant orchards should consult some one who has experience, and will give honest advice.

WINE.

I make but little, but raise quantities of grapes, the Concord being the leading variety with me. Peaches I do not raise to any extent. Pears are not a success. Strawberries and raspberries produce immense crops,—some I ship to Chicago in crates.

FISH.

The Illinois river furnishes an immense quantity of this healthy food. Thousands of young Salmon were put into the river during the season of 1879, in hopes of stocking the stream with this desirable variety.

CREAM AND BUTTER.

We have recently introduced the Cooley patent creamer and it is a success. We get more cream, and the butter is better, as the milk is all skimmed before it gets sour. About

twenty per cent. of the butter produced here is sent out of the county.

POULTRY.

The bronze turkeys are my favorites, they are hardy and grow to a fine size. Nearly all turkeys slaughtered are also used here. I have raised some that weighed twenty-eight pounds.

GEESE.

The Embden variety is the best to raise, as the birds of this variety are hardy, and their flesh is equal to the best. I give the geese "a wide berth." I conclude they are not profitable adjuncts to the farm. Indeed, according to my way of thinking, a goose on the table is worth half a dozen on the farm.

DUCKS.

The Rouen is the most profitable. I have several larger kinds, yet the former are the most hardy, and are just as good on the table as any.

CHICKENS.

For laying purposes, I prefer the Leghorns; for the table perhaps there are none more profitable than the "Plymouth Rock," as several desirable qualities are combined in the latter. I have a flock of common guineas and a dozen pea fowls; these I need to keep up the music of the barnyard, and create a commotion when any strange thing occurs. The chicken cholera is at times felt more or less on every farm; our best kinds always die first. While I have lost turkeys, guineas, and chickens, I have never lost a duck or pea fowl with this dreaded epidemic. I guard against it by keeping the henhouse clean and sweet; whitewashing and scattering lime freely in and about their house.

FLORAL HOME,

was originally most all prairie. The timber was in 1834 about three feet high; it is now about forty feet, straight and vigorous. The land is well drained, and as productive as any of the land in the county. I have all the timber and stone needful for ordinary purposes. A good quality of bituminous coal can always be easily obtained, not remote from any of our farms.

We have some flat lands in this vicinity, but these are being drained and redeemed. Hundreds of acres of this flat land it was thought a few years ago would never be worth much of anything except for pasture. Several

MILES OF TILE

have been put in during the season of 1879 which we feel assured will enhance the value of such land from forty to sixty per cent. A good many of our farmers have had open drains. These have proved valuable, but they are inconvenient, and every one now is substituting tile drains.

These drains, hand-made, cost sixty cents per rod; made by new patent horse power ditcher, they cost something less.

FENCES.

First we made "sod fence," then worm fence. Later we tried hedge fence (Osage Orange). I have a few posts (Red Cedar) that have been in use thirty-seven years; a few rails made and used forty-four years. Again we had wire fence, and the latest and most approved is the "Elastic barbed lock wire fence." This last we think will take precedence of, and supplant all other forms of fence. In the seven thousand miles I have traveled, East, West, North and South, and in all I have seen and learned, no place seems to me better adapted for agricultural, horticultural and kindred purposes, than this, our beloved county, and our dear FLORAL HOME!

C. W. ALLISON,

MILLEDGEVILLE, CARROLL COUNTY.

A Grain and Stock Farm — How to Handle Barley — Corn Culture — Fall Plowing Strongly Advised—Devons Recommended — Berkshire and Poland China Hogs Crossed — Horses and Dairying.

My farm is situated on Sections Thirty and Thirty-one, Township Twenty-three, in Carroll county, and comprises two hundred and twenty acres.

The farm, as a whole, is a grain and stock farm. One hundred and sixty-five acres are under cultivation, the remainder being pasture, orchards, building lots and yards. About forty acres are exclusively devoted to pasture, lying on both sides of the Elkhorn creek. The soil is a black loam, with a clay sub-soil, and is admirably adapted to the raising of corn, oats, rye, barley, wheat, broom corn, buckwheat, and all root crops raised in this region.

FARM IMPLEMENTS.

I use the Gilpin sulky plow, and the Dixon walking plow. My Gilpin plow is a three-horse sixteen inch sod and stubble moleboard. The walking plow is a stubble moleboard. I use a three-horse drag similar to the Scotch harrow, a grain seeder, McCormick reaper, self-raker, and Elward harvester. I use

THE HARVESTER IN SECURING MY BARLEY,

first cutting and allowing it to fall to the ground from the binder's table (having the foot-board removed). Thus it is left in winrows where it soon dries, and is raked by a horse-rake, the horse walking between the winrows. This leaves it in small bunches, and these bunches are put together by the men in heaps, about four small bunches to each. It is allowed a short time to settle, when it is hauled and stacked or stowed in a mow or hay-barn.

CORN MAY BE RAISED WITH PROFIT

two or more years on the same land without changing, but

wheat, oats, and barley, seldom, if ever. Corn does not exhaust the soil; nearly all other crops do. The ground intended for corn should be plowed as far as may be in the Fall. In fact, for any and all crops Fall plowing is preferable. It is also much easier for the horses to do this heavy work in cool weather. If corn is to be planted on Fall plowing, the ground is first cultivated with a corn cultivator (the Stover is preferred). It is then dragged smooth again, and marked. Next the corn is planted with a Brown planter, after which it is dragged two or three times, as required. The drag should be kept on the corn until it is three or four inches high. Then from three to five times plowing will secure you a crop, nine times out of ten, of from forty to eighty bushels per acre, according to quality of soil. I raise from four to five thousand bushels annually by following this method as closely as circumstances will permit.

THE STOCK

preferred for beef and milk is a cross with the Devonshire and our native cows. This gives a steer ready for market at any age, and at all seasons of the year,—like the Berkshire hog. Cows raised from this cross are far superior to those of any other cross for farm purposes. For beef, the Short-Horn Grades are more profitable; being larger, and carrying more gross weight. They sell from twenty to fifty per cent. higher than the common native stock.

MY SHEEP

are of the Leicester breed; commonly shearing from nine to sixteen pounds of wool. The carcass weighs from one hundred and fifty to two hundred pounds gross.

THE BEST HOG

that I can raise for early marketing is a cross between the Poland and Berkshire. Poland sows are preferred, and Berkshire males.

My method of raising hogs is as follows: I aim to have my pigs come in in April and May, and allow the sows the freedom of the pasture. The pigs are allowed a field of about

eight or ten acres of corn to run in, as soon as it is hard enough to be shelled from the cob with their teeth. These pigs are marketed in December or January at an average of from two hundred and fifty to three hundred pounds. My stock hogs are kept almost entirely on grass during the Summer.

MY HORSES

are of the Clydesdale breed. I have six brood mares, all grades, of the above breed; five of them being black, and one of a dark gray color, averaging in weight twelve hundred pounds. This breed of the above weight secures to the farmer an animal unsurpassed for general usefulness on farm and roads, and also makes a showy carriage team. As for speed, a cow that sucks herself is about equal in value to a 2.40 mare for a farmer. My colts from the above described mares sell readily for one hundred dollars and upward, at the age of two and three years old.

BEES.

I keep a few colonies of bees, not for the profit there is in the business, but chiefly for home use. I manage to sell enough honey each season to pay all expenses of hives, honey-boxes, etc. I keep the Italian bees.

DAIRY.

The best breeds of stock for the production of milk is the Jersey. Native cows crossed with a good Jersey bull greatly increases the milk and butter qualities.

The region of country in which I live is an undulating plain. The land is gently rolling, sufficient to drain itself, and not abrupt enough to wash the soil from the tillable portions. It is prairie, with here and there a small tract of timber. A ride by carriage from our county-seat to the south-east corner, caused Dick Oglesby to exclaim, "This is the finest part of the great State of Illinois." And we believe that a visit to our section will convince any unbiased mind of the truth of his assertion.

C. L. HOSTETTER,

MOUNT CARROLL, CARROLL COUNTY, ILLINOIS.

Short Horns — Hogs — Roots, Pasture, Pure Water, Good Shelter and No Medicine The Best Cure of Hog Cholera — Berkshire Hogs and Their Management — Fish Culture.

SHORT-HORNS.

I am breeding thorough-bred Short-Horn cattle and Berkshire hogs; have also experimented in raising fish in artificial ponds. There can be no question but that the Short-Horns are the best cattle for beef, and the grades from a thorough-bred bull make the very best beef, as the awards in the show rings fully demonstrate. It is not necessary to have very high grades; the half bloods or three-quarter bloods from a good bull are often larger than higher grades. To make cattle raising profitable in Illinois, we must raise the best, and to do that we must have thorough-bred bulls; these are facts so well established to intelligent minds that they need no illustration to make them more patent.

HOGS.

I have had much experience in the care of hogs and have brought a fine lot through two years of hog cholera. I am convinced that with the right kind of hogs, and with proper care, Hog cholera can be avoided. This I say from two years' experience. In the first place I had pure bred Berkshires.

I do not have my breeding stock fat, nor do I breed young sows before they are one year old; neither do I breed together those that are near akin. I feed as little corn as possible, and graze my breeding stock on rye, blue grass and clover, at different seasons of the year, letting them have the range of the farm. Hogs will find many roots of weeds and worms that assist greatly in keeping them in good health, and enable their systems to throw off disease. On this account the Berkshires are the best; they are active, and if not too highly fed, will

go out regularly to graze in the pastures, while hogs of other breeds will lie about and soon become sickly and diseased. I have observed that my young hogs follow the plow for several hours at a time in the furrow, picking up all the grubs, worms and roots which they could find.

When the hog cholera raged in our neighborhood, and hogs were dying off daily, I turned mine into an orchard where nothing had been for sometime with good effect, for the hogs soon began eating the roots of the common burdock that had been growing under some old trees. At times hogs crave lime, and it is a good plan to give it with ashes, salt, and a little sulphur. Hogs should at all times have access to water after feeding corn. Nothing is better than a spring, particularly in Winter and Summer. As soon as hogs have eaten dry corn they will travel some distance to drink.

FEEDING.

Do not call hogs out of their warm nests too early in the morning. Let the sun get up first and warm the air a little in cold weather, and do not call them up to feed until late in the evening, as in fine weather all will not have come in from the fields until dark. Provide different sleeping places, so that too many will not lie together; if the places for the smaller pigs are the warmer, they will crawl into them through holes just large enough to admit them, and in this way they will divide into several lots. That the Berkshires will withstand the cholera I know from experience, and I notice from the reports of the commission appointed by the government, and published in the agricultural report for 1878, that the Berkshires were the only hogs that did not die of the disease when exposed to it at the experimental station. I think that my hogs have had the disease several times, but it did not prove fatal, and they were enabled from their healthy condition and strong constitution to come out of it all right. I used no medicine except to disinfect the premises occasionally when I noticed a disagreeable smell, by scattering about a little crude carbolic acid. This can be purchased by the gallon and is easily applied as follows:

Fill a small bottle with the acid, putting a quill in the cor like a pepper sauce bottle, and sprinkle it about in pens an manure piles. It is an advantage for hogs to run with cattl in which case it is not necessary to grind the grain, as nor will be lost, the hogs getting what is not appropriated by th cattle and which is better than steamed food. By the wa steaming or cooking food, except for young pigs, does not pa for the fuel used, or the trouble involved, and as a gener thing, good hogs will grow fast and keep fat enough witho having their food cooked. Forcing hogs with highly nutritiou cooked food weakens the system, and makes them more liabl to disease. Sows with pig should be well fed, and the youn pigs taught to eat well before they are weaned.

WHEN A SOW FARROWS

she should not be disturbed in any way, not even though th time of feeding should go by. Let her remain quiet until sh gets up of her own accord. In ten years' experience I neve had any trouble with Berkshires when farrowing. In all you operations use judgment and common sense; of these a farme needs as much or more than any business man. He should not however, make a slave of himself, but should read and associat with his fellow man on all proper occasions.

FISH

can be easily raised and creeks stocked with better varietie than they usually contain, by a very little care. It is th Spring floods and mud of our creeks that cover up and was away large quantities of the spawn of fish. By making smal ponds, where no dirty water can run into and deposit sediment a few fish, such as you desire to raise, can be put in th Winter. These will spawn in the Spring; that is, nearly al kinds excepting trout and salmon. I have raised only the blac bass and sunfish in this way, and have a pond now full of young fry from bass put in a year ago. This pond was originall made for an ice pond, is only four or five feet deep, supplie by a small spring, and covers about one acre. Of course i would be better if it were deeper, but it is my intention onl

o use it for ice and spawning beds; the young fish will be free o go out after the Spring floods are over into a small stream ear by, where they will be able to take care of themselves. Iore elaborate arrangements are necessary for raising fish on cientific principles, but any farmer who has a spring that can e dammed up, in a location where the surface water can not ash in dirt and sediment, can have a fish pond.

LORENZO D. WHITING,

TISKILWA, BUREAU COUNTY.

Noxious Weeds — Canada Thistles, Quack Grass and White Daisies — Urgent and Prompt Necessity for their Extermination — How It Can Be Done — The Switch Gate — Stanchions For Cows — Yard For Wintering Stallion.

NOXIOUS WEEDS.

That Illinois may lead the world in agriculture follows from the fact that nature and circumstances have combined to give her many advantages. In constructing a ship, great care is used to exclude any material which tends to weakness and decay. In the same spirit, aroused to the utmost, we should so prosecute our agriculture as best to preserve our lands from contamination, and transmit them unimpaired and improved to our successors.

There are certain noxious weeds which are a bane to agriculture, and if once well established may be set down as fixtures. The cockle burr and Indian mallow (sometimes called "cotton weed," "velvet weed," and "stamp weed,") may be considered as belonging to this class, and these are already sprinkled over much of our State.

But we are now threatened with others more dangerous and damaging. Canada thistles, quack grass and white daisies are a brood more to be dreaded, and they are just peeping over the border longing for a lodgment in our fair fields. Canada thistles have been prospecting here for some time, and a few

have stealthily settled themselves in more places than are generally supposed.

When I left Western New York thirty years ago this pest was just beginning to attract attention. No one seemed to suspect that his field was to be permanently invaded. I visited that country recently, and found they had swept over the whole land like a tidal wave. They flourished in the lake sands and on the clay bluffs, in door yards, church yards and cemeteries, along the highways, and peeping up between the ties of the railways; and logs or rubbish resting upon the ground are speedily festooned, matted, and buried with their growth. Every neglected spot seemed a nursery for this weed. I asked a farmer if his farm was as badly infected as others? He replied, "There are but two patches on my farm, one beginning at the north end and reaching south to the center, the other beginning at the south end and reaching north to the first!" The whole country is so saturated with them that many people there think they grow spontaneously, without seed or germ. My friend was not a swift witness against them, but in the course of conversation he mentioned that on one occasion he prepared a field very nicely for oats. When these were first headed he looked over them with pride, seeing nothing but a waving sea of oats. At harvest he could see nothing but a huge crop of Canada thistles! It produced about thirty bushels of oats, though my friend confessed that but for the thistles, he would probably have had more than forty. The thistles taxed him more than ten bushels of oats to the acre, besides the cutting, binding, shocking, stacking and threshing of a crop quite as bulky as and far more troublesome than the real crop.

Quack grass and white daisies are not so generally distributed, and farmers exempt from them comfort themselves that their thistles were a lesser evil, illustrating Hudibras,—

> We compound the sins we are inclined to,
> By damning those we have no mind to.

The science of farming there seems chiefly to be how best to head off Canada thistles. Their crops, tools and methods

are shaped by these pests. Summer fallowing so dwarfs them, that the following wheat crop is not much disturbed. Two good hoeings save the corn crop. A Scotchman said that in his country they go among the growing grain, and with a spade-chisel cut them below the surface. I met no one so hopeful as to suggest that they would ever be exterminated.

Will Illinois in like manner be inundated? If we tread in their footsteps, we may read our doom in theirs. When I came to Illinois thirty years ago, I remarked, that on the first appearance of Canada thistles here, I would move farther West; but when I heard of them at Naperville, Rockford, and Joliet, it excited my attention, but not to the moving point. Eight years ago a neighbor, formerly from thistle-grown New Hampshire, came excitedly to my door and announced that his "son had discovered a patch of Canada thistles about one mile to the west up the valley of Rocky Run." I visited the farm and found an irregular patch covering about twenty-five square rods. The tenant who rented the farm had noticed them, but had not suspected their true character. Here was the dreaded enemy at my door, but it was inconvenient to run, and I thought it quite as valiant to face him and fight. My alarm was communicated to the neighborhood, it spread to the county, and through the prompt action of the Board of Supervisors, a careful inspection was made and patches were found in half the towns.

The next General Assembly passed a Canada thistle law, which now rests upon the statute books, and "rest" is the exact word to express the situation. In Bureau county these thistles were exterminated through the machinery of this law, and in some others, but the people have gone to sleep on the subject, and will not probably be aroused till fresh apprehensions shall cause a more startling outcry. Still, it is something to have the law, with its effective machinery ready to be invoked. The ridicule of this "law against weeds" did not exclude it from going into the Revised Statutes. It rests upon the same solid principle of public interest, and public safety, as do the laws in regard to fires and contagious diseases in

cities. As these can not safely be left to individual management, neither can we afford to leave this vegetable contagion to individual ignorance and negligence. The public interest is threatened, and the public alone is compelled to deal with it.

Because Canada thistles have not spread more rapidly in our State, some hopeful persons profess to think our soil and climate are unfavorable to their growth. This mere theory should not lull us into a fatal security. It took two years, at an expense of more than fifty dollars, to kill out my patch of a few square rods; and I do not know that other places were more successful. About forty years ago when the Illinois canal was building, a straw bed was emptied near Joliet. Canada thistles made their appearance on this spot, and in spite of much labor against them, they have spread out on the bottom, up the bluff, into a corn field, and the last I heard of them were still "marching on." It is probable that but few of the seeds grow, else we would have been inundated, but a few is enough to endanger us. Once they find a lodgment, they become to agriculture what a cancer is to the human race. Common thistles are a biennial; they grow from the seeds only. The first year they are a plant; the second year they shoot up, blossom, bear seed, and die, root and all. The Canada thistle does all this, except the root does *not* die. This is immortal! Its runners send up new shoots at every favorable place. It holds all it gets, and gets all it can. It thrives best on moderate abuse. If it has not already proved its ability to cope with our climate and soil, a variety will make its appearance equal to all emergencies. It will get acclimated and naturalized, and find our rich lands a very comfortable home. If left until they lurk in every by-place, and the ground is saturated with their seeds, ready to spring up on the first favorable occasion, their extermination will probably severely tax our endurance. Prevention is safer than cure! "Eternal vigilance" is alone our safety.

On my return from New York I watched from the window of the flying train to see how far west they had emigrated. I saw them all the way through Canada, and ten miles this side

of Detroit. They do not lack the means of moving. Every through car, every traveler, box or package — even the birds — may bring the seed. The railroad strips are well adapted for nurseries, from which the whole country may be readily supplied.

But can they be EXTERMINATED? Yes, where they do not seed, two years cutting, *constant* cutting a little below the surface, through the growing season, once a week, or as often as they show themselves, is fatal to them. Some longer watching may be needed, lest others come from the seed. The old adage must be heeded — "one year's seeding, nine years weeding." Taken early, they can be exterminated by watchfulness and persevering labor applied as named. Will it pay? A gentleman of my county, who knows them, says, if they are to come he will give one of his quarter-sections to have the other quarter kept free! If some believe the injury will not be half our land, let us take the moderate estimate of ten dollars an acre as the damage. This, computed on our more than thirty million acres, gives the damage of seeding the State of Illinois to Canada thistles, $300,000,000. This amount, as a State debt, or mortgage on our farms, would strike the people with terror. But the thistles should be the greater terror. Mortgages may be removed, but the other incumbrance holds by the hated law of entail to the end of time.

Our Eastern friends have some excuse for their dalliance; but if we let them come, we sin against light and knowledge. We shall receive, and deserve, the execration of all time, if we permit these fair lands, received by us from the hands of a beneficent Providence in virgin purity, to be polluted, and hence forever cursed with Canada thistles! (In some parts of Europe they are known as the "cursed thistle.") This, and other noxious weeds not already naturalized here, should be fought as we fight fire, cattle plague, and contagious diseases. Indeed, we should put those already among us, as Lincoln would Slavery, "in the course of ultimate extinction."

Illinois farmers who are inspired with the noble ambition to make model homes and model farms, to improve their meth-

ods so as to keep pace with the progress of the age, and with the onward sweep of civilization, will not be indifferent to this threatened danger of a perpetual blight on agriculture. Apathy will be fatal. Safety will only be assured from an aroused public sentiment, stimulating individuals to watchfulness and care, moving the press, agricultural societies and legislative bodies, each in its sphere, to do its appropriate work. With all this we need not fail, but if we do, it is at least noble to try. Self interest, duty, and patriotism all speak with one voice; and I trust it will move to proper action the intelligent and public spirited of our noble State.

THE SWITCH GATE.

It is sometimes convenient to have a stable door open into a front yard, or a rear yard, at will. I have an arrangement to effect this object. The fence dividing the two yards points in the direction of the stable door. At the distance of sixteen feet stands a post, as for a gate. From this post to the door is a panel, constructed like a gate, and hinged to the post. As this gate is too heavy to swing on hinges, a friction wheel is placed on the end next to the door, and a plank is laid for a track, so that it may move easily from one side of the door to the other. Turn this gate to one side and the opening from the stable will be to the front yard; by turning it to the other side, the stable will open into the rear yard. The stable door should be a slide door, or at least it should not open outward. The "switch gate" should have some convenient device for self-fastening, as it is moved from side to side; and this fastening should be such as to be easily opened from either side of the gate. As my arrangement for this might not be so well adapted to another place, I omit its description; but will remark, that it can be opened or closed with ease by the operator on horseback from the side of the rear yard where this operation is most needed.

I have in use two of these "switch gates" to accommodate two different openings. One is seven feet high, boarded close,

so as to answer when closed one way, for an end to a lean-to shed on the east side of the barn. This one accommodates the work-horse stable, and the "switch" only moves as far as the door is wide. The other communicates with another stable, and besides being a "switch," is also a gate opening one way, so as to give passage for a wagon.

STANCHIONS FOR COWS.

This can be used singly or collectively, at your own pleasure. Construct the stanchions in the usual manner, except that you omit the usual latches or traps for holding the movable stanchions: and make these movable stanchions one and one-fourth inches longer than otherwise needed, so as to reach about three inches above the upper horizontal beam. These movable stanchions must all be placed on the side nearest the front end, or entrance to the stable. On the upper side of this horizontal beam fit on a strong board one and one-fourth inches thick, as long as the beam, and about as wide, with slots corresponding to those in the beam. Place this board so prepared on the upper side of the beam, with the movable stanchions protruding through the slots in the board. Attach to this top board the usual latches or traps used for catches to hold the movable stanchions in their places. These latches should be a sort of trap door to fall to its place as the movable stanchion is moved to its place in closing.

At the front or entrance end of the stable, attach a lever to the end of this upper board, in such a manner that by working the lever the board may be slid back and forth, moving on the upper beam. It will be seen that this sliding works all the movable stanchions at the same time, opening or closing as the case may be, and when closed, each movable stanchion may be worked in the usual way, separately if desired. The lever must be so arranged that when the stanchions are closed it can be conveniently fastened, so as to hold the board in place. It will be seen that this arrangement combines the single and the collective method either, to be used as may be desired. I use

this plan in my stable for six cows, but it is applicable to any length or number.

YARD FOR WINTERING STALLION.

To enable and to ensure my Norman stallion having proper exercise, and mostly to take care of himself when idle, I constructed a yard forty-eight by seventy-two feet, on the west side of the barn, which constitutes one of the forty-eight feet sides. The posts for this yard are nine and one-half feet long, and inserted three and one-half feet in the ground. On the inside are notched three two by six horizontal joists, properly spaced, and it is tightly boarded up and down with eight foot boards. In one corner is constructed a stable, by using a few extra longer posts to give proper slant to the roof which slants outward, and this stable has a door opening into the yard. One corner of the yard comes up to the stable door of the barn. By means of a "switch gate," (which constitutes the entrance to the yard,) this yard can be made to communicate only with the stable, but when opened wider, it connects with the space outside.

The "switch gate" is sixteen feet long and eight feet high, so boarded as to correspond with the fence. The ends of its frame are timbers six by six, and these connected by three horizontal pieces two by six; and braced with two pieces of the same size. It is hung by a hook and eye at the top, and rests at the bottom on an iron gudgeon working in a hole drilled into a stone for a foundation. The end of the frame where the gudgeon is inserted, is banded with an iron ring. The moving end of the gate rests on a friction wheel about a foot in diameter, so framed into the end piece as to roll on a track of plank in moving the gate. This gate on closing is made to self fasten by means of a "catch" on a long and strong spring attached to the barn. This "catch" is made to open by means of a lever on either side of the gate, and on the inside is a bail or handle for convenience of closing the gate from that side. If two or more animals of this kind are to be provided for, this yard may be made useful by giving it to

them in turn. It will also be found useful for bitting and handling wild colts, and for other and all uses where an enclosure is needed so safe and sure as to be free from all feeling of insecurity.

The cost of this yard complete as described was substantially as follows:

2,700 feet lumber for enclosure and stable at $16. per m. - - - - - -	$43 20
260 feet lumber for gate at $16. per m. -	4 16
Hinges, wheel and catch for gate - -	2 00
27 posts at 25 cts. - - - - - -	6 75
Nails and spikes - - - - - -	4 00
Labor - - - - - - - -	10 00
Total cost	$70 11

H. A. COLLINS,

HAVANA, MASON COUNTY.

A Grain Farm — Corn Culture — Planking the Ground Puts it in Fine Condition — How to Save and Where to Keep Seed Corn — A Cheap Open Ditch — Rye Plowed Under a Valuable Manure.

I raise nothing but grain. The soil is a rich, black loam, with a hard-pan from four to six feet below the surface. My farm is situated nine miles southeast of Havana, Mason county, on "Bull's Eye Prairie." The climate is excellent. This prairie is so situated that we are not as liable to early frosts as many other localities. It is sheltered on the north by high sand hills, and on the west by wood land. The prevalent winds are northwest. I have large, commodious outbuildings on the farm, which make a warm barnyard for stock. My horses are of the Morgan and Black Hawk breed, both being easily kept, and free from disease, besides being good and true pullers. I give the horses a mixed feed, sometimes corn or oats alone, or corn and oats ground, or else oats and bran;

but I never give two consecutive meals alike. My teams always have a good appetite, free from hide-bound, and they are never constipated. Each horse has all the salt it needs.

The houses and buildings are on the east side of the farm, and half-way between north and south.

COST OF RAISING CORN.

Corn seems best adapted to my land. I rotate crops so as to keep up the quality of the land. Corn will yield seventy-five bushels per acre, while wheat will only average fifteen bushels per acre. The cost of raising one acre of corn is as follows:

Breaking with a three-horse plow	$1 00
Rolling, if ground is cloddy	25
Harrowing, to loosen ground	50
Planting with planter, a man and boy	25
Rolling again	25
Cultivating four times	1 60
Husking	1 75
Shelling	1 15
Hauling one and three-quarter miles to station	75
Cutting stalks with cutter	25
Sundries	2 50
Total	$10 25

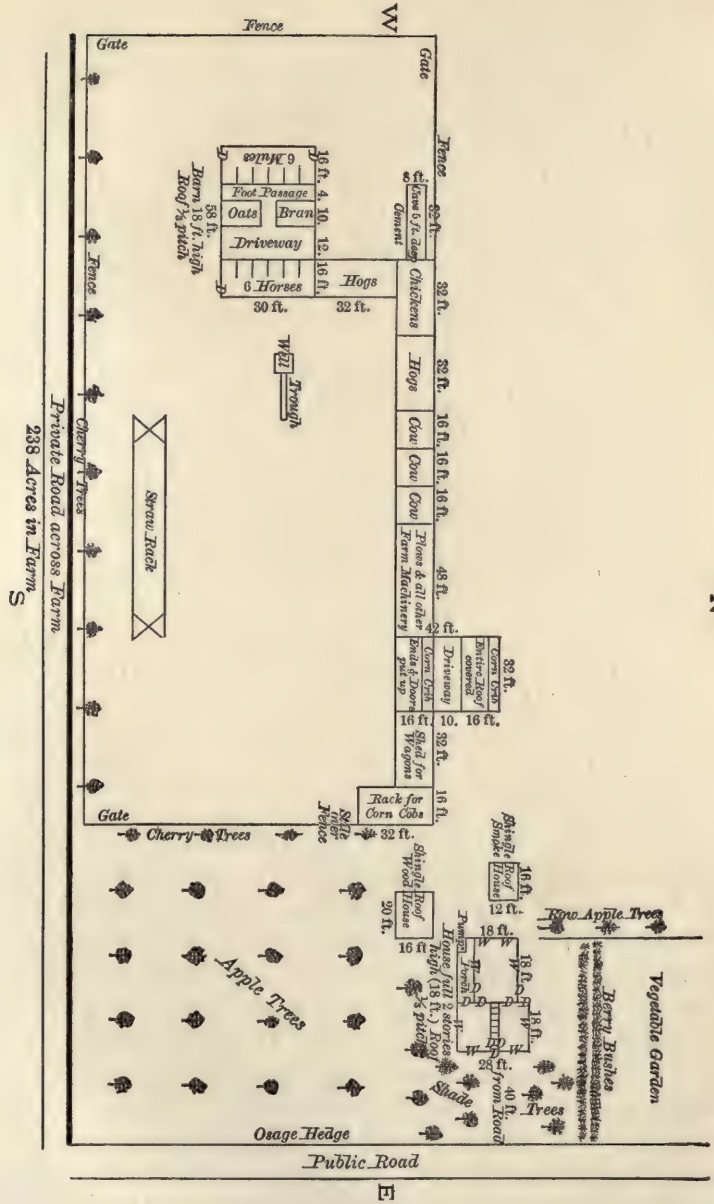
Taxes are twenty-five cents per acre.

HOW TO GATHER SEED CORN.

Over my wagon shed I put the seed corn for the coming year, selecting it as follows: When the men are gathering the corn, they have a large basket in the back of the wagon, and whenever they find three good ears on one stalk, they throw the best one into the basket; but if two good ears are on one stalk, the better one is saved, generally the bottom ear, in which the germs are more fully developed than in the upper one.

Over the cows, hogs and chickens, we put the corn for our stock.

My corn cribs are set up on a high stone foundation, with


W
N
S
E
Fence
Gate
Fence
Gate
Fence
Barn 58 ft. 18 ft. high Roof ½ pitch
6 Mules
16 ft.
Foot Passage
4.
10.
Oats
Bran
12.
Driveway
16 ft.
6 Horses
30 ft.
Hogs
32 ft.
Well
Trough
Straw Rack
Cherry Trees
Private Road across Farm
238 Acres in Farm
Gate
Cherry Trees
Sawing & Cutting Geared
6 ft.
32 ft.
Chickens
32 ft.
Hogs
32 ft.
Cow
Cow
Cow
16 ft. 16 ft. 16 ft.
Plows & all other Farm Machinery
48 ft.
42 ft.
Driveway
Corn Cribs Ends & Doors put up
Corn Cribs Entire Roof covered
32 ft.
16 ft.
10.
16 ft.
Shed for Wagons
32 ft.
Rack for Corn Cobs
16 ft.
Stake Fence
32 ft.
Shingle Roof Wood House
20 ft.
16 ft
Shingle Roof Smoke House
16 ft.
12 ft.
Row Apple Trees
Vegetable Garden
Berry Bushes
Apple Trees
Osage Hedge
Public Road
House full 2 stories high (18 ft.) Roof ½ pitch
Summer Porch
18 ft.
18 ft.
18 ft.
18 ft.
28 ft.
40 ft.
From Road
Trees
Shade

a raised floor in the driveway. I have my corn sheller, which shells for a number of my neighbors, making at least $500 every Winter with it. The granary has a farmer's carpenter shop up stairs. I have no pasture, consequently I feed our cows in the barnyard. The water is very good, and a good quality of coal lies near the surface.

When the Winter will permit I cut my corn stalks with a stalk cutter using a single row cutter, as it does better work, and is easier on the teams. I turn the stalks under before Spring, and give the land another plowing. I have found that a system of thorough cultivation will yield big profits, but skinning a farm will ruin it. In the preparation of the ground for corn I plow with a three-horse plow. I never use gang-plows, as I have found them a failure, making too hard work for the teams.

PLANKING THE LAND.

The land is then well rolled, but a better plan is to take three twelve feet planks, two by eight, lay them weatherboard fashion, bolt them together, put a good stout span of mules at each end, and drag the freshly plowed ground. This puts the land in the best possible condition. I then harrow it thoroughly, roll it with a light roller and mark it off. I use a planter with a good sized boy to drop the corn. I do not use a check row planter, as I am of the opinion that it does not put the seed into the ground deep enough.

I plant the corn whenever I have ten acres in order, and by this plan the crop is put in without any delays.

In cultivating the corn I go slow, and am careful not to cover it, nor to run too close to the stalks; otherwise the side roots will be injured, preventing a good sturdy growth. I plant every year a little oats, followed by wheat. I rent all the land I need for cutting grass. The rent of this land is one-third in the stack and it pays me better than to cut my own land, which is not suitable for hay.

CHICKENS.

My chickens are the Plymouth Rocks, and they are healthy,

good-sized, fair layers, and not inveterate setters. A cave adjoins the hen-house for the chickens in cold weather; it has clean nests, the inside is whitewashed and there is glass in the southwest to admit sunshine.

To make my hens lay I feed plucks boiled and chopped fine, together with a mixture of wheat shorts and boiled potatoes. Lime is air-slacked and put in boxes around the yard. The water is kept in rusty iron kettles, and charcoal is sprinkled around the house to disinfect it. Scraps of meat, hogs' heads, and egg shells are put in the way of the fowls.

DITCHES.

To make a new open ditch, I employ a good surveyor at the start. I direct him to run two or three lines, and then see which will drain the most land, with the least ditching, as the deeper the ditch the slower the water will run. I always make an open ditch with plows and scrapers. I plow two furrows on the off side, and scrape the dirt back at least fifty feet, on the side that needs filling up the most. I make the bank one foot rise to four feet back. I do not have the bottom too wide, eighteen to twenty-four inches will suffice, as when the ditch is full, no matter how fast the top may be running, the water on the bottom is nearly stationary. And another thing, a narrow bottom ditch is much easier to clean out than a wide one. The banks must have a good slope, or else the musk-rats constantly work and fill up the ditch. Again, a side ditch running into a main ought never to empty at a right angle, because it will wash the opposite bank, and cause a bar to form below its mouth. A scraped ditch will not cost one-half as much as a ditch dug with spades. A good team will scrape out from fifty to fifty-five square yards of dirt each day, and carry it back fifty to seventy-five feet. I have in the ditch one extra man, to load the scrapers, to every four teams. I do not hurry them, but let every scraper come out as full of dirt as possible. It will cost twenty-two dollars to make an open ditch half a mile long, eight feet wide on the top, and two feet wide on the level—deeper, of course, through the ridges. This is equiva-

lent to one day's work for nine teams, at two dollars and a half per day, allowing an extra team for plowing.

It will never pay to ditch unless you are sure of a good outlet, be it for an open or tile drain. In tile ditching, the best size is a good six or eight inch pipe, end to end, loose joints, and as few curves as possible. In ditching it is always advisable to have the drain so arranged that the water will run quickly into the drains, instead of lying on the ground any length of time.

WHEAT.

In drilling wheat I always drill east and west, making the lands not more than eight feet wide, and then all the dead furrows will act as drains to carry off the water. Above all, I always have good farm implements, and prefer to buy a new one rather than fix up an old worn-out plow or cultivator.

RYE AS A FERTILIZER.

I sow rye in corn in September, and the next Spring turn the rye under and put it again in corn. This has produced a visible increase over adjoining land, where there was no rye. Where corn stalks are cut up in eight inch pieces and turned under in the Fall or Winter, with a good sixteen inch iron beam plow, it is as good as sowing the rye.

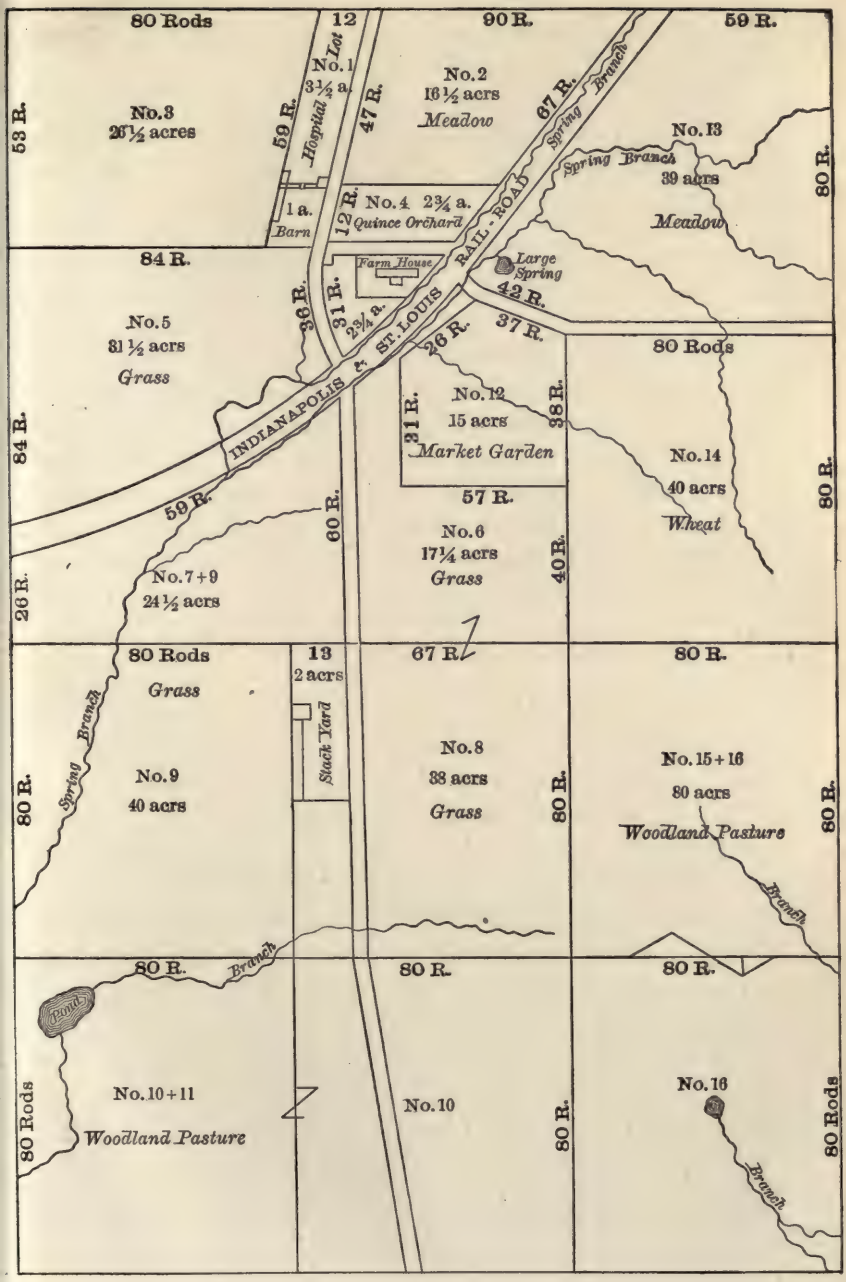
W. W. THORNTON,

SHELBYVILLE, SHELBY COUNTY.

The Redemption of an Old and Neglected Farm—Treatment of Meadow and Pasture Land — Large Crops of Wheat and Grass.

MAPLE SHADE FARM.

On the banks of the Okaw River, three-quarters of a mile from the city of Shelbyville, in Shelby county, is situated one of the old farms of the State. A portion of it had been cultivated for forty-five years, and under the old style of management was gradually wearing out. Falling to the lot of its present owner in 1874, a new departure and cultivation was in-


80 Rods
12
90 R.
59 R.
No. 1
3½ a.
Hospital Lot
No. 2
16½ acrs
Meadow
No. 3
26½ acres
59 R.
47 R.
67 R.
Spring Branch
No. 13
39 acrs
Meadow
Spring Branch
80 R.
53 R.
1 a.
Barn
12 R.
No. 4 2¾ a.
Quince Orchard
RAIL-ROAD
84 R.
Farm House
Large Spring
42 R.
No. 5
81½ acrs
Grass
36 R.
31 R.
2¾ a.
ST. LOUIS
26 R.
37 R.
80 Rods
INDIANAPOLIS
No. 12
15 acrs
Market Garden
31 R.
38 R.
84 R.
No. 14
40 acrs
Wheat
80 R.
59 R.
57 R.
60 R.
No. 6
17¼ acrs
Grass
40 R.
No. 7+9
24½ acrs
26 R.
80 Rods
13
67 R.
80 R.
Grass
2 acrs
Stock Yard
No. 8
38 acrs
Grass
No. 15+16
80 acrs
Woodland Pasture
Spring Branch
80 R.
No. 9
40 acrs
80 R.
80 R.
Branch
80 R.
Pond
No. 10+11
Woodland Pasture
No. 10
80 R.
No. 16
80 Rods
Branch

augurated. A thorough survey and study of the ground revealed a body of land 480 acres in extent, and of unusual natural beauty. A strong spring branch, bordered by a railroad, ran from north-east to south-west through the grounds which rose in gentle swells on either side, with open blue grass pastures and wood-covered knolls in all directions.

THE PASTURES

were overgrown with shrubs and weeds, and the knolls thick with briars and underbrush. The fences were in a dilapidated condition, in fact but for the friendly briars and grape vines not a crop would have been safe from the ravages of roaming stock. An entrance at the western side made a devious route through the farm to the house, turning to every point of the compass. Arriving there the view was anything but enchanting, broken down fences, dilapidated out-buildings, and a practically roofless barn being the surroundings.

CHANGES BEGIN.

Deliberate thought convinced me of needed changes, which were at once begun. A new roof on the dwelling and barn, and a pulling down of the out-buildings were the first improvements. A substantial outside fence was the next. This necessitated the entire removal of the old and the building of a new fence, with the corners cleared of briars and bramble, and well sown with grass seed. Next, such an arrangement of the interior fences was made as would enclose fields of nearly uniform size, and at the same time allow a full supply of water to each.

EASY ACCESS TO THE FIELDS.

Next, such an arrangement of the entrances and lanes as would give access to all or any one of the fields or pastures without going through another. All of these changes had to be made under the directions of one educated as a merchant. I had to make innovations upon established customs, employing men who were confident they knew much better what was needed than myself. This experience at times was both

amusing and annoying. Nevertheless, the changes were made, but I am free to confess that some were right and some were wrong.

RESTORATION OF WORN-OUT FIELDS.

When the fields were all platted and fenced, my attention was turned to the cultivation of the lands, which had been cropped and re-cropped with corn, and an occasional sowing of wheat, until fifteen bushels of corn and ten bushels of wheat was the average result. Fortunately a portion of the farm had been allowed to remain in grass. One of these fields was well broken in the Fall of 1874, and cultivated, cross harrowed and sown with red clover early in May, 1875. One bushel of clover seed was used upon three acres. Late in July the fox-tail, cockle burr and a coarse weed (name not known) so covered the clover as to nearly hide it. The hired man who lived on the place was shocked when he was told to take the mowing machine, set as high from the ground as possible, and cut clover, fox-tail, burrs and weeds all together. I used the grass, clover and weeds for rough feed for young stock. But when the weeds were rank, say four feet and over in hight, they were left as a mulch for the clover.

THE RESULT.

The next year (1876) at the proper time, a more beautiful field of clover was never seen. It was fairly crimson with bloom, and at harvest yielded the bountiful crop of three and one-half tons to the acre, weighed as hauled from the cocks after thorough curing. Not a burr was to be found, and no weed seeds having matured the field was clean and the clover vigorous. In 1877 this field yielded an increased crop. A vigorous after growth was turned under in August, and the field sown in wheat about the 23d of September. From it in 1878 a yield of twenty-two and a third bushels per acre was harvested. Finding a very full stand of clover on the stubble, a mower was set about five inches high which cleared the clover, but all standing stubble, with the few weeds that had

grown, were cut and allowed to fall as a mulch and a protection for winter. In the Fall of 1879 this field afforded excellent pasture, which was allowed to grow and be turned under for a green manure crop.

THE NEXT FIELD,

forty acres, was newer land and not so filled with weeds. It was not broken until April, 1876, and when plowed was pulverized with cultivator, rolled, and then harrowed until in good condition. In May, timothy seed, mixed with red clover, in proportion of six quarts of the clover seed to one bushel of timothy, was sown at the rate of one-third bushel to the acre. In September the whole field was cut over before the weed seeds were ripe, the growth being left as a mulch. At the harvest of 1877 this field yielded two tons of grass per acre. Directly after harvest it was thoroughly harrowed. In the Spring of 1878 it was again cross harrowed, and at the harvest it cut three and one-quarter tons per acre.

AN OLD MEADOW.

The next field was old and apparently exhausted, on which stood shocks of corn not over five feet high, averaging less than ten bushels of nubbins to the acre. This field was treated substantially in the same manner as the meadow. It contained eighteen acres. The first six acres were sown with pure timothy seed, one-third bushel to the acre; the next six acres with one-half bushel, and the last six acres with one bushel of seed to the acre, under protest from my men as a waste of seed. The latter part of August, 1875, the entire field presented the following appearance: where one-third bushel of seed was sown a vigorous crop of weeds entirely covered the grass; where one-half bushel was sown, more grass and fewer weeds, and where one bushel was sown, a crop of grass from twenty to twenty-four inches high and nearly half weeds. The whole field was cut with the mower before any weed seed ripened. The grass only from the last six acres was raked and stacked, yielding one ton to the acre, of a poor growth. The grass

from the other twelve acres was left as a mulch. The after growth was clipped by sheep in the Fall.

THE MEADOWS HARROWED.

In the Spring of 1877 the meadows were all thoroughly harrowed. This eighteen acres having in the Winter been liberally top dressed with stable manure, presented a beautiful even surface and cut three and a fourth tons of hay per acre. Where the grass was not thick enough it was re-seeded. As soon as the harvest was over, a thorough cross harrowing was given all the meadows to cover up the scattered seed and fill the unseeded spots. At the harvest of 1878 this eighteen acre meadow yielded a luxuriant crop of timothy hay from four to five feet long, averaging four tons and forty-nine pounds per acre, the heaviest going as high as four tons, six hundred and ninety pounds. The severe drouth of 1879 reduced the yield to two tons, fifteen hundred and seventy-six pounds to the acre. The after growth was strong, and a full top dressing for next season was applied, with every prospect of a good crop.

The next field of forty acres had three patches of tangled undergrowth and small timber, occupying at least ten acres and encroaching every year upon the tilled ground. These were cleared up and the field plowed in April 1875, the west twenty acres being top dressed and planted with Irish potatoes and cabbage. The east twenty acres were sown in oats. Both crops proved a failure. The following year (1876) this field was well plowed and planted with corn, a part of which was only a fair crop. One portion of the field, occupying about twelve acres, did not yield enough to repay the plowing and the seeding, on account of the cold wet ground.

A GREAT CROP OF WHEAT.

During the Winter of 1877, all the stumps were taken out and good deep ditches cut to effectually drain the field. In 1878 the entire field was sown in millet and the result was a very poor crop, at least half weeds. After harvest the stubble was broken with a three horse plow, eight inches deep, and all of the high and rolling ground covered with stable manure at

the rate of three cords to the acre. This field was then cultivated, harrowed and rolled until it was in good order, then sown with wheat, two bushels to the acre. My repeated failures in this field made me anxious for the wheat, which was therefore closely watched. All parts of the field looked well and grew vigorously. Even on the wet ground of previous years, now ditched, there grew a luxuriant crop to the edge of the ditches. As early as the ground would admit in the Spring of 1879 the field was harrowed, no attention being paid to crossing or following drills. My neighbors as they passed along the highway commented upon the probable killing of the wheat with such usage. After harrowing, the wheat grew wonderfully, and at harvest yielded forty-two bushels and forty pounds per acre for the whole field. The former waste places along the ditches were estimated at from sixty to eighty bushels by numerous persons who came to look at the wheat while growing. The same field after thorough plowing was again top dressed with manure, rolled and harrowed until pulverized, and then sown with wheat drilled east and west, one bushel per acre, then cross drilled with one and one-quarter bushels north and south. It will be thoroughly harrowed in the early Spring, but is now growing luxuriantly, with every promise of a more abundant crop than ever.

REHABILITATION.

The whole farm now presents an entirely changed appearance. An entrance gate near the center of the north side of the farm, opens into a broad carriage or wagon way bordered by osage orange hedges. On the right hand, as you enter, is a hospital lot of five acres, with grass, water and shade trees, accessible from barn lot and pasture. Further south is the barn with plain sheds and lot of two acres. South of this is another lot of three acres, reaching to a branch with a never ceasing flow of pure water. Along this roadway, with proper gates opening into them on either side, are pasture lands and fields. Passing south until a large hay barn is reached, this lane ends at the timbered land which forms the southern boun-

dary. This was dense timber with tangled undergrowth, but is undergoing a gradual process of clearing for wood-land pasture. As it is cleared, the waste timothy seed, clover, and in fact all kinds of grass seed gleaned from lofts, is sown upon it with liberal hand. The result is a luxuriant growth of tame grass,which displaces the wild grass, weeds and trailing vines. A small herd of full and half bred Jerseys, with a few native cattle, some colts reared on the farm, and a flock of Shropshire-down sheep, peacefully crop the fields. The wild shrubs have disappeared from most of the pastures and fence corners. Stumps are gradually being removed from the fields and a general improvement is visible.

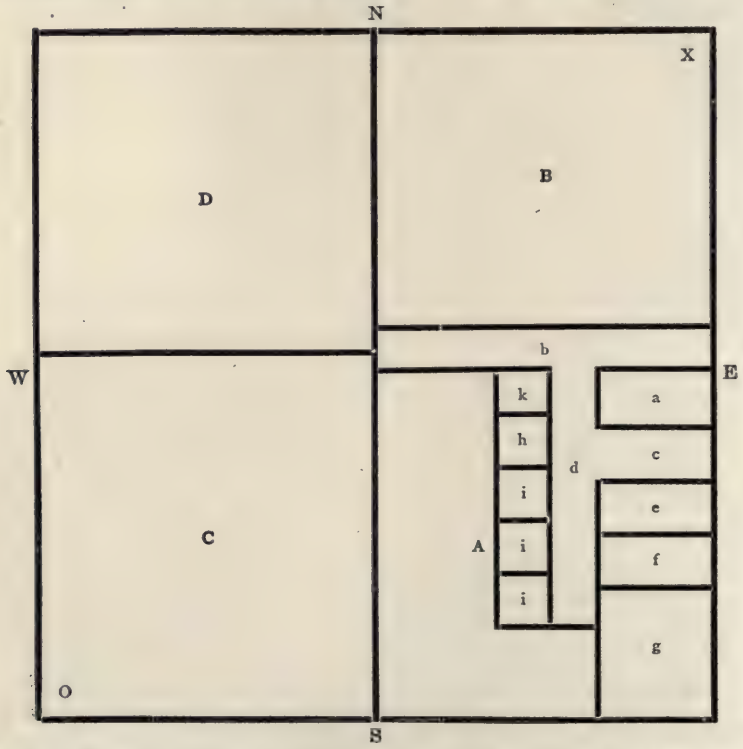
DANIEL W. SEDWICK,

SUEZ, MERCER COUNTY.

Cost and Manner of Raising Corn — Burns the Corn Stalks — Harrows the Ground Thoroughly and Never Fails to Raise a Large Crop — Meadows and Pastures — Sheep — Hogs — Tile Ditching and its Cost Per Rod.

I have not a model farm, but I am working up to it as fast as my means will permit, and if I never reach it, will at least have the satisfaction of knowing that I have made a comfortable and convenient home for my family. My home farm consists of 160 acres, fenced, and is the N. E. ¼ of Section No. 15, in Mercer county. I began in 1870, by purchasing forty acres, marked "A" in the plat, and I have since added "B," "C" and "D." My land was broken up and fenced with post and pole fence, which, however, has since been replaced with a good hedge fence—osage orange—and is divided into five lots. "A" is a lot of 25 acres in pasture; "B" is in corn; "C" is in pasture; "D" is half in meadow and half in corn. My house is on "B;" "a" is a lot of three acres, rolling ground through which a slough passes, and is planted in walnut trees; on the north and south

side of the slough are blackberries — Kittatinny and Snyder; "b" is a lane running through east half of farm; "c" and "d" are also lanes; "e" is a house lot planted with evergreen and other trees; "f" is a garden with evergreen grove on west; "g" is an orchard with over 300 trees, most of them in bearing; "h" is the barn, and "i i i" yards for cattle, sheep and hogs; "k" is a trough supplied from the spring in "B," which is tiled from



"x" and "o" to "k." There are also troughs in lots "i i i." Tile is also laid in "C" and "D" through a large slough, making every foot of land tillable. I make it a rule to seed down twenty acres and break up twenty acres every year. In this way my land is kept in good condition. With the exception of from fifteen to twenty acres of oats each year, and twenty acres of meadow, I raise corn and convert it into beef, pork and

mutton. I have also one hundred and five acres of land besides the home farm, which are in timber and pasture. I have kept a correct account of my expenses of raising corn, and I find it can be done at a cost of twenty cents a bushel. My plan of raising corn is as follows: The twenty acres I break in the Fall, I harrow in the Spring with a Scotch-hinge harrow, until I have a mellow, even seed bed. Then I mark with a four-row marker and plant three feet eight inches with a Keystone planter, making my corn 3 by 8 each way, I then harrow the same way the corn is planted, and in a few days cross harrow, and keep harrowing until the corn is four to six inches high, when I begin cultivating with a John Deere and Granger cultivator. I go over the corn with the cultivator three or perhaps four times before the corn is too high. I cut and plow my corn stalks under, but do not consider it as good a plan as to burn them, for the reason that the eggs of many insects are deposited in the dry stalks and will hatch out and injure the corn. I plow, however, and cultivate my Spring plowing in the same manner, stirring the ground as often as possible. Many object to using the harrow after the corn is up, for the reason that too much corn is torn out, but I have tried every way until I am well satisfied that the harrow is the best implement on the farm for working corn, until it is six inches high. Very few weeds will sprout, if two inches under the ground, and those near the surface will be torn up and killed by the harrow, while corn planted three inches deep will not be injured.

IMMENSE YIELD OF CORN.

I have raised this way one hundred and three bushels shelled corn to the acre, and the crop seldom falls below sixty bushels. I have pasture outside my home farm. I keep more stock than I can raise grain and hay to feed, so I add more to my farm than I take off, and always have a fine lot of manure. This I haul on my pastures and meadows in the Fall, spread as evenly as possible and then by running a harrow over it leave it in very good condition to be taken into the soil by the Fall rains. I find Fall pasturing to be injurious to meadows. Pas-

tures are the better for not being cropped too close in the Fall.

STOCK.

My cattle are Grade Short Horns, and are therefore raised mostly for beef, though I have among them some very good milkers. But we have no dairies near, and the price of butter has not been sufficiently high to encourage giving much attention to the production of the article. I keep a few sheep, they are a cross of Cotswold and Leicester, and are good mutton sheep paying very well for wool. The fleeces in 1879 averaged nine pounds. I have a shed for one hundred sheep. It is one hundred feet long and twelve feet wide, closed on the north, east and west, and open on the south. I think open sheds better for sheep, cattle, or hogs, than closed stables or sheds.

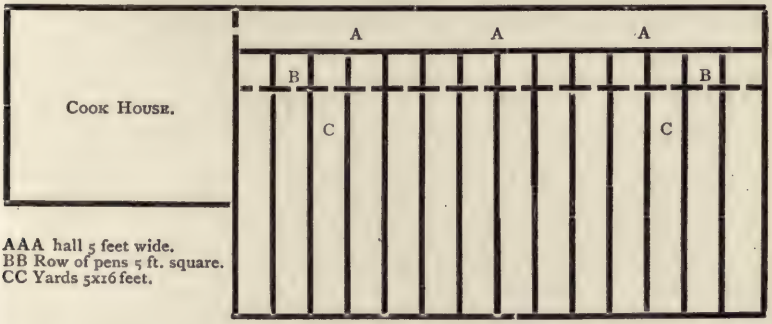
SHEEP SHED.

A very good sheep shed may be made by setting posts every eight feet, as long as you may wish the shed, in two parallel rows, twelve feet apart. Level the posts to eight feet high. In the center put another row nine and one-half to ten feet high, side up on north, east, and west. Lay the roof double and cover with half inch siding or undressed sealing. My sheep lots are in a row from north to south. These sheds on the north side of the lots answer as a fence or division. My hogs are of the Poland-China breed, and, as a general thing, have no shelter but the open shed, being fatted by following cattle.

HOG HOUSE.

For breeding purposes I have a convenient and good house for hogs, which is constructed as follows: First I built a house large enough for storing, grinding and cooking feed, then an addition, as per plan, fronting south. Hall and pens covered. This allows the feeder to pass along the hall feeding each sow. The troughs stand through the center of the building, half in the pen and half in the hall. The trough is raised high enough to allow small pigs to slide under and avoid being laid on by the

sow. In dividing off the pens begin on the bottom with a six inch board. On the top of that lay a board flat, say twelve inches wide, and then finish siding up. This gives a place on three sides to protect the small pigs. The yards on the south are five feet by sixteen, in which sows and pigs can run at will. These yards if not raised up and dry, should be floored. A house and shed of this description will enable one to raise a litter of pigs



AAA hall 5 feet wide.
BB Row of pens 5 ft. square.
CC Yards 5x16 feet.

early, which may be weaned at the age of eight weeks; the sows may then be bred again and another lot raised later in the season. The first lot will make hogs weighing over three hundred pounds by the first day of January following. The second lot will be ready for market the next June. The best feed for young pigs is rye, oats and corn mixed, ground and cooked. If you wish to fatten hogs, whole corn is better than anything else.

TILE DRAINAGE.

When I first began improving my farm, I cut many rods of open ditch, three feet wide at top, two feet wide at bottom, and two and one-half feet deep. This drained the sloughs well. The land could be worked up to the ditch, and the ditch kept well open in wet weather, but the first dry season the edges crumbled, falling into the ditch, and by Fall it was half filled up. This did not satisfy me, and to test tiling I put in one hundred and fifty rods of tile three feet below the level of the ground, filling in the old ditch with a plow. Forty rods of this I put in six inch tile, one hundred and ten rods three

inch tile, the whole work costing me one hundred and fifty dollars, or one dollar per rod. This proved a success, as I could then plow over the slough, making me a square forty acre lot without a foot of waste ground. I soon found that four inch tile would answer as well as six inch, and save one-third in the cost. A four inch tile will carry off all the water that a three inch tile will carry to it. We have very few sloughs that a four inch tile is not large enough to drain thoroughly. I have since put in nothing over four inch and nothing under three inch. Last Fall I put in two hundred rods; forty of four inch, at a cost of twenty dollars per thousand, and one hundred and sixty-three of three inch, at a cost of fifteen dollars per thoussand.

To dig the ditch three and a half feet deep, costs twenty cents per rod exclusive of board. By this drainage, all my sloughs are now dry. I have some flat land that I intend to tile as fast as practicable. Many of our old settlers claim that we are going to ruin the country by draining off all surface water, thereby causing a drouth, but I fear nothing of the kind, as in a wet season, we have plenty ot water, and in a dry season, as in 1879, we can find no water at the depth the tile is laid. How, then, can the tile make the land any worse? One of the best counties in Illinois is Mercer. The prairies are large and generally rolling, soil rich and deep and well adapted to raising corn, oats, grass, and wheat crops. Where there is no running water, plenty can be had by digging ten to twenty feet deep. Along the streams is timber for fencing and fuel, and the woodland, when cleared, is good for wheat, oats and grass. Our titles are good and land can be bought for from fifteen to fifty dollars per acre according to improvement.

A. C. HAMMOND,

WARSAW, HANCOCK COUNTY.

The Orchard—The Ben Davis the Most Popular Apple—Pears —Cherries — Plums — Grape Fever — Fruit and Vegetable Garden—Value of Evergreens for Hedges—Hay Crop.

If not very numerous, we have at least some model farms, well supplied with fine stock, thrifty orchards, handsome and commodious buildings, in Hancock county. The northern and eastern portions are well adapted to corn and stock growing, and are mainly devoted to this industry, while the southwest corner, along the Mississippi bluff, is one of the finest fruit-growing sections in the State, and boasts of a number of large and productive orchards. From them have been gathered the fine collections of fruit that have taken so many premiums and received so many commendations, during the past five years, at the State Fairs, State Horticultural Societies, and Winter meetings of the State Board of Agriculture. Some of the finest consignments of apples that have gone to the St. Louis market have been from this point.

ORCHARD.

My own specialty is the orchard, in which I have been moderately successful. My orchard consists of seventy acres, planted at different times from 1857 to 1877, the larger portion of it now being in its prime. It is located three miles from the bluff of the Mississippi river, on land that was originally covered with hazel, crab-apple, and wild plum.

The Ben Davis apple has been more extensively planted than any other variety. Winesap, Jeannet, Willow Twig, Red Canada, Jonathan, Rambo, Pryer's Red, Maiden's Blush, Red Astrachan and Sops of Wine coming next. I have 200 varieties growing in my orchard, at least three-fourths of them being for experimental purposes only, and I am yearly adding

every thing that promises to be of value, hoping yet to find the coming apple, *i. e.*, an apple combining the size, color, hardiness and productiveness of the Ben Davis, with the crisp, delicate flesh and superior flavor of some of our best sorts, like the Red Canada or Jonathan.

The Ben Davis is the most popular market apple in this locality, and in common with other orchardists, I have planted largely of it, but do not think it advisable to exclude better varieties, as the time may not be far distant when it will be a drug in the market, on account of its poor quality and the great quantities grown.

Commercial orcharding, in the hands of the specialist, generally proves to be profitable, but in the hands of the average farmer it is often a failure. This arises from the fact that the countless hordes of insects that prey upon the tree and fruit, and the numerous diseases the trees are subject to, requires more attention than farmers can or will bestow upon them. From

FOUR OR FIVE ACRES OF MY BEN DAVIS ORCHARD

I have gathered the past season six hundred bushels per acre, which, of course, gives an enormous profit. But it must be borne in mind, that while four or five acres yielded a profit of two or three hundred dollars per acre, the remaining sixty-five or six did not give a profit of ten dollars per acre. I have not found any branch of horticulture profitable, except apple growing. After

TWENTY YEARS EXPERIENCE,

I have concluded that peach growing for commercial purposes does not pay, as we can not, in this climate, rely upon having a crop oftener than one year in three or four.

PEAR TREES

suffer so severely from blight that I have, after losing hundreds of them, concluded to give up growing this delicious fruit for market.

EARLY RICHMOND OR EARLY MAY

is the only cherry worth growing for market purposes in

central Illinois. But owing to the cost of gathering, transportation and the low price which they usually bring, even this variety does not often prove remunerative. I have four hundred thrifty, bearing trees, but they yield little or no profit.

Ten years ago I planted four hundred European plum trees of the most approved sorts, but the hard Winters that followed swept them out of existence. Some of the native varieties, like Miner and Wild Goose, are hardy, but the ravages of the curculio precludes the possibility of getting any fruit. When

THE GRAPE FEVER

was at its hight, I had it badly, and planted largely of all the highly-lauded, high-priced sorts, trenching, subsoiling, and underdraining in the most approved manner, and at great expense. All have fallen victims to our Arctic Winters but the Concord, which continues to produce annual crops of fine fruit, but on account of the low price at which the fruit is sold, I have reduced the variety to about one acre.

WIND-BREAK.

My farm consists of about two hundred acres, and is divided into fields ranging from twenty to forty acres. It is inclosed and divided by osage orange hedges. On the north and west of the orchards it is allowed to grow high, the sides being trimmed out of the way, to form a wind-break, but on the road, and where used as a division fence, it is kept down to about four feet. If permitted to grow untrimmed, it gives the farm a slovenly, unkempt appearance, and draws so heavily on the soil for one or two rods on each side, as to make it impossible to grow any crop successfully.

THE LAWN

is inclosed with an evergreen hedge of Norway spruce, planted two feet apart, and kept sheared down to three and a half feet, with a width at the base of about three feet. After it is once established it requires but little attention (two shearings a year), and is a thing of beauty, both Summer and Winter. The garden is also partly inclosed with a similar hedge, but of

arbor vitæ in place of spruce. This makes a handsome hedge in Summer, growing rapidly and bearing shearing remarkably well, but turns brown in Winter. I also have several hundred evergreens, from three to twenty years planted, growing about my farm and buildings, for wind-breaks and ornament. They are principally spruce, white, Scotch and Austrian pine, hemlock, balsam fir, arbor vitæ and juniper.

Evergreens, whether planted for wind-breaks, hedges or ornament, give an air of taste and comfort to the farmer's home that can be secured in no other way, and add tenfold their cost to its money value.

THE GARDENS.

One-fourth of an acre is devoted to a vegetable garden, half as much to a flower garden, and an acre to a fruit garden. The latter is planted to strawberries, raspberries, blackberries, currants and gooseberries. In prolific years the yield of fruit is greater than my family can consume, but in seasons of short crops the space devoted to the fruit garden will be found none too great to supply a large family, with an occasional basket over for a friend.

THE WARSAW HORTICULTURAL SOCIETY

is a live, energetic association, organized primarily for the purpose of encouraging the planting of commercial orchards and vineyards. It has been eminently successful in furthering this object, and within its territory may be found some of the largest orchards and vineyards in the State. It has also done much toward developing a taste for fruit and vegetable gardening, floriculture and ornamental planting, and its influence is seen all over the adjacent country, in the better kept grounds, and the general improved appearance of the homes of our well-to-do farmers.

HAY.

Outside of the orchard, I devote most of my farm to grass, converting it into hay for the Southern market. Clear timothy yields on an average about one and one-fourth tons per acre, which at $15 per ton in St. Louis, is considered a fair return.

During the years 1877 and '78 hay did not pay the cost of production. This fact caused many of our farmers to plow up their meadows and turn their attention to other crops. As a natural result, hay, in the Fall of '79, brought $18 to $20 per ton in that market. This crop, grown and taken from the farm, year after year, is very exhausting to the soil, but if mixed with clover, the yield is greater, and the drain much less, but the price of the hay is materially lessened also. I shall, however, hereafter grow mixed hay, as it is undesirable to draw so heavily on the reserve fund of the soil—a fund that should be carefully husbanded for future use.

H. K. MARSTON,

ONARGA, IROQUOIS COUNTY.

Successful Corn Culture — How Twelve Thousand Bushels of Corn were raised from One Hundred and Sixty Acres — Culture of Small Fruit.

There is an old saying, "He is the benefactor of his race, who causes two blades of grass to grow where one grew before." I believe this applies, with equal force, to him who produces two bushels of corn where one was grown before. While it is eminently proper to encourage a love of esthetics in our farmers, to urge them to beautify their homes, to provide picturesque as well as comfortable shelter for their children, and their cattle, yet, as "money makes the mare go," large yields of the fruits of the earth are at the bottom of agricultural prosperity; and as it is impossible for me, within the limits of a short article, to construct an elaborate treatise on agriculture in all its various departments, I propose to confine myself to the cultivation of our great staple — Indian corn.

I remember a valuable lesson that I was taught by a neighbor more than twenty years ago. We were both comparatively young, and had just opened new farms on the virgin prairie. We had all the land we could use, and employed no

help during the growing season. Each desired to get the largest returns for his labor, and was willing and able to do a large amount of work.

We met at a picnic on the 4th of July, and the conversation naturally turned to the subject we were both most interested in, our crops. He asked me how much corn I had in? I answered, "Sixty acres; how much have you?" "Thirty!" "What have you been doing all Summer?" "I'll show you when we get to husking!" He then went on to say, "I have ten acres that I have worked six times, and twenty acres, four times. I intend to go through it all once more, and lay it by" I worked all of mine twice, and a part of it three times. I did not think it necessary to cultivate corn much when the land was clean, for I had the idea that the main object in cultivating was to kill weeds. When the crop was ripe, my neighbor procured help and cribbed his corn before bad weather came on. His ten acres produced about one hundred bushels per acre, and his twenty acres, sixty bushels; in all about 2,200 bushels of corn from thirty acres. I was all Winter husking, and did not have from my sixty acres over 2,000 bushels After that I tried his plan, and have raised as high as ninety bushels an acre, simply by thorough and frequent cultivation Actual results are more convincing than any theories or arguments unsupported by such evidence. Many assertions have been made, as to how cheaply corn can be grown on these prairies, cases in point have been given on experimental cultivation of small patches, but I will now give the results of a good system of cultivation on a fair-sized scale, how it was done, and with what kind of tools, so that any one can "go and do likewise."

D. K. PEARSON'S CORN FARM.

D. K. Pearsons, of Chicago, has a farm of a section (640 acres) not a day's ride from this place. It is managed by one of the most practical corn growers that I know of. In 1872 he told me that he cribbed twelve thousand bushels of corn grown that season from one hundred and sixty acres of land.

He tells me that in 1879 he had one hundred and fifty acres in corn, and I give his statement of how he did it, and the results. He says: "I believe in Fall-plowed land for corn. I had about fifty acres Fall plowed last Spring that I planted to corn, and one hundred acres Spring-plowed. The Fall-plowed I worked as follows: I fastened two Dixon harrows together with clevices, side by side; these I attached to a light bob sled (the front bob) by two poles, one end to each drag, bringing the forward ends of the poles together, and securing them to the bolster of the bob sled; this enabled me to make short turns, the harrow thus covering about twenty feet in width. To the tongue I hitched six horses, four abreast, and one pair for leaders; then I placed the driver on the bolster, where he could control his team and set them to work. The soil, being the ordinary black prairie loam, was rather wet and sticky at the start, and I had it harrowed over once, and let it be a couple of days, then cross-harrowed it thoroughly. With this rig, I could put about twenty acres per day in very fine condition for planting. This was planted between the fifth and tenth day of May, in rows three feet ten inches apart, dropping about two kernels every two feet in the row.

"Immediately after planting, before the corn had sprouted, I cultivated the rows, running the shovels four or five inches deep, as close to the rows as possible, then, after five or six days, before the corn showed above the ground, I cross-harrowed thoroughly, and harrowed again, soon after the corn came up. As soon as the rows could be well followed, I set the cultivators at work; plowed about once a week, set the teeth of the cultivator so as to draw the earth a little toward the corn, until about the fifteenth of June, when the corn was fifteen inches high. I then took a stirring plow, with short share, so as not to cut the corn roots more than necessary, and plowed to the rows, making good ridges, and so called it 'laid by.'

"The one hundred acres I plowed in Spring, as soon as the condition of the soil would admit, and planted between the tenth and eighteenth of May. I harrowed it well before planting, and again after; then plowed (cultivated) four times, as

before stated, only that I ridged all I could, with the cultivator, instead of using stirring plow.

"During the growing season, the Spring-plowed presented much the better appearance; the corn attaining a hight of about ten feet, and the ears hanging five to six feet above ground, while the other was only about eight feet high, with ears about three feet above ground. But the latter came in well on the home stretch, the ears being very uniform in size and weighing fourteen to eighteen ounces each. The fifty acres thus averaged seventy bushels of sound, well matured corn per acre, while the one hundred acres, Spring-plowed, turned about fifty bushels to the acre.

"I am satisfied that Fall-plowed land is preferable to Spring-plowed, for corn; the latter can thus be planted earlier, and will be in much better condition for planting and cultivating. Every farmer knows the beneficial effects of freezing and exposure to atmospheric influences on the soil. Although the Spring-plowed was planted five to ten days later than the other, it was up as soon, and, at any time during the season, the casual observer would have called it the better crop; yet it was not, by fully twenty per cent.

"The principal part of the labor in producing corn should be done *early*. Thorough harrowing, at the time of planting, stirring the ground deeply with cultivators soon after, cultivating it often while small, before it has thrown out its brace roots, and leaving the ground in good shape for them to penetrate far and wide, is, in my estimation, the way to get the largest yield in husking time. I would not discuss 'Hilling *versus* Level Cultivation' at all; the same object may be accomplished in either way.

"In this country farmers attempt too much, and the result is, the average of the State, in a fair season, is less than thirty bushels per acre, instead of fifty bushels or more, as it should be. Employ help at the proper time and it will always pay. I only oversee my work, and I hire every thing done except this; yet my expenses in raising this crop do not exceed eight cents per bushel in the crib."

I fully concur in the foregoing. My sixty-acre experience, as stated, was conclusive with me; and I can point to very many who are doing the same thing year after year. In very favorable seasons, they succeed well, but ordinarily the weeds get the start, and they only succeed in cultivating a small portion of the driest part of their farms. Their richest lands grow up to weeds, and they drive over four acres, in husking time, to gather what should be gathered from one.

DRAINAGE.

Our prairies are not dead levels; there can not be a rise in the surface without a corresponding hollow. These swales or sloughs, between the rolls, are the richest portions of our lands, but they take the seeping from the higher ground adjacent, and are actually wetter than the flatter lands. Almost every farmer plows, plants, cultivates, and harvests from ten to thirty per cent. of his land, that yields him little, if any thing, except in the driest seasons. This is the principal reason that our average is so low, but the remedy is very simple. There is very nearly, if not quite, enough labor expended in cultivating this kind of land each year, to drain it thoroughly, thereby rendering the farmer independent of the season. In many cases, one farmer can not drain alone; his outlet is across his neighbor's land, who, like the "dog in the manger," will neither do himself nor allow others to do; or, who is so selfish that he will wait for his neighbor to expend time and money, while he (the selfish one) reaps the benefit. Systematic unity is requisite to success. Drainage laws are needed, but many will suffer loss year after year, rather than have a quarrel with their neighbors.

The time is coming when we shall have a thorough system of drainage, then thorough cultivation will be the rule instead of the exception, and one hundred bushels of corn to the acre will not be an exceptional yield, as it is now.

SMALL FRUITS.

I will add a few words on the culture of small fruits, especially strawberries. Much has been said and written on

"matted rows" and hill culture. Without arguing the points I will simply poll my vote for rows every time.

All strawberry growers agree that this plant requires enormous quantities of water to grow successfully. I prefer to discuss the subject by stating actual experience.

The first successful strawberry grower in this locality resided about six miles from the railroad. A farmer's wife put out about one-quarter of an acre, and succeeded so well that she increased to one acre. This was about fifteen years ago. The result in this case was a fine new house and commodious barn, paid for almost entirely with strawberries in about five years.

The next example was a dentist, who, having a large lot in town, planted out about an acre. The land was wet and sandy; about one-half of the plants were drowned, but the other half astonished the natives. From less than half an acre he sold 110 bushels of strawberries at an average of $10 per bushel—over $1,100.

This gave an impetus to the business, and almost every one who had a spare rod of ground set it to strawberries, until there were about 200 acres of this crop in this village. In 1875 I procured seven car-loads of box stuff, in the flat, to ship the fruit in, and about 350,000 quart boxes and 12,000 cases, or crates, to put them in.

The rainy season injured the crop seriously, and the hard times so depressed prices that very many plowed up their patches, and at present there is less than half the former amount of land devoted to the crop.

It has been demonstrated beyond a doubt that all land is not suited to this business, and that with that, as with other crops, it requires work, and work done at the right time. One of our most successful growers had a lot of about two-thirds of an acre of sandy land that had been richly manured and planted in garden stuff for years. This lot produced nearly one hundred bushels per crop for several successive years. He was so pleased that he rented three acres, set out and cultivated them thorougly. At harvest his first picking yielded

very well, but on going over the second time he picked about twenty crates (twenty-four quarts) from his two-thirds of an acre of sandy land, and only three or four from the three acres of black loam. The result has been the same on many lots of similar land—great loss to the grower who attempted it. And it is patent now to all, that the plant requires so much water that our ordinary prairie soil can not supply it. Another point is equally well established: That, to insure success, a thorough course of cultivation as in other crops and heavy manuring during that time, is very necessary.

I will give my mode of treatment, and the results, on a small lot of about half an acre. The land is a light sand, rather wet, but has no standing water. It had been cultivated as a vegetable garden for several years, and heavily manured. It was plowed and harrowed smoothly in May, the plants set in rows four feet apart and about one foot apart in the row. I cultivated between the rows as often as every week or ten days, and hoed between the plants in the row until the plants put out runners and new plants to root. Then I let it grow.

Soon as the ground was frozen two or three inches deep, I spread on coarse slough grass at the rate of four tons an acre, which laid on until the frost was out in the Spring. I then raked off the hay, and stacked for the next year. Just before the blossoms appeared, I cultivated and hoed thoroughly, and let it lie till the crop was picked.

In harvesting it is very essential that all the ripe ones should be taken off at each picking, as ripe fruit left on the vines becomes over-ripe in two days, and besides being a loss of so much fruit, is a damage to that which is marketable. My first picking amounted to forty-eight quarts (two crates); the second day after I took off ten crates, the next day, Saturday, four crates; Monday twenty-five crates. The crop amounted to one hundred and ten crates, worth that year about $500, which I thought was pretty good for half an acre.

After the first year all one can do is to pull the large weeds as they mature. This lot produced four crops, averaging from one hundred to one hundred and twenty cases per crop. It is

rather difficult in our climate and soil to get a good stand of plants, but on such land as I have described plants can cover the ground, and yet produce very fine, large fruit.

Others have met with better success than I have, but I think all those who were successful pursued nearly the same course that I did, while very many have failed, either because they did not use good judgment in the selection and preparation of their land or else they did not bestow their labor at the right time.

The cost, in this locality, of an acre of strawberries, at the maturing of the first crop, including cost of plants, and all labor necessary up to picking time, is from fifty to seventy-five dollars per acre.

The best time to set out plants is in the Spring, as early as the ground can be worked, though they can be set successfully at any time, when the ground is not frozen, or too dry.

O. B. JENNE,

ELGIN, KANE COUNTY.

The Dairy Cow — Her Pasture — The Dairy Barn and Its Construction — The Rearing of Calves — Best Way to Market Milk.

The qualities we seek for in a cow for the dairy are, first, good size and ability to give a large quantity of rich milk, and second, a tendency to take on flesh, so that she can be turned into beef when, from age or any other cause, she ceases to pay for milking. The breeds I should recommend are the Durham and Holstein. The latter breed have been introduced into the West quite recently, and have not been thoroughly tested as yet, but they promise well.

PASTURE AND HOW TO MAKE IT.

My pastures contain a variety of grasses, which mature at different periods and furnish fresh feed for a long time.

Age improves a pasture. The grass becomes thicker set and finer from year to year, and if one desires to enrich it, a compost spread on in the Fall and Winter, a harrowing with a sharp toothed harrow, and if the grass is not well set, a sprinkling of seed will produce satisfactory results. No weeds, such as thistles, mullein, etc., should be allowed to go to seed, but should be cut in season with either scythe or spade.

Meadows should be prepared by liberal manuring, deep and thorough plowing, and a thorough pulverizing of the surface soil with harrow and roller. Seed should be clean and pure, no matter what the cost of obtaining it. It should be spread liberally—say one peck of timothy to four quarts of clover per acre. This can be done in the Spring with the Spring grain, but I have practiced the following plan for several years, with the best results: I prepare my ground immediately after harvest and sow the timothy, without any other crop, so that it will receive a good start before Winter. The clover must not be sowed so as to sprout in the Fall, for it will Winter-kill, but it should be sown any time in Winter, or before the frost comes out in the Spring, so that it will be ready to sprout as soon as Spring opens. By this process the timothy matures the next season, and makes very fine hay.

It is desirable to have a good proportion of clover, as the second crop makes fine Fall feed for the cows, or a crop of seed can be gathered of far greater cash value than the first crop of hay was, or else it may be cut for hay, and if well cured, it will produce milk in Winter better than any other fodder.

When feeding to make milk, hay should be cut as soon as the timothy is in blossom, and carefully cured without being touched by rain or dew. In order to accomplish this, if there is a prospect of rain when the hay is partially cured, it must be put in small stacks, and as soon as the weather permits be opened out to the sun and air before drawing it to the barn. If there is no prospect of rain, it should be raked in winrows over night, and be drawn from there next day. As soon as a

meadow fails to yield a paying crop, it should be broken up, cultivated a year or more, and re-seeded as before.

DAIRY BARN.

My dairy barn is built with a stone basement eight feet high. The building has twenty feet posts, sides and ends boarded and battened, and made as nearly air-tight as possible. The roof is provided with a cupola for ventilation, and ventilators are in the gables.

A horsefork and carrier is used on account of the extra hight obtained by the twenty foot posts, and for the purpose of carrying the hay to the end of the longest barn. To give a free passage to the carrier, no beams cross the center of the bay. The basement is finished with large doors in the center of each end, for the entrance and exit of the cows, and the team used to haul out the manure. Windows along the sides are provided with sash hung at the top for the sake of ventilation. Stanchions are also placed on each side far enough from the wall to admit of manger and a row of chests for ground feed, with space to pass along next the wall to feed hay. There is an opening through the floor above over this passage to throw down the hay. The floor is raised three or four inches high back from the stanchions toward the center of the stable, far enough so that the hind feet of the cows will be on the edge, and with a slight inclination, so that no water will stand on it to foul the cows when they lie down.

CARE AND FEED OF COWS.

During the pasture season my cows are out night and day, except while milking, when they are driven quietly into the stable and turned out again as soon as milked. The milking is done in the most cleanly manner at regular intervals, just twelve hours apart if possible, and by the same hands, in the same rotation, commencing each time with the same cow, and going through to the last. When the pasture begins to fail, the deficiency must be made up by feeding some green crops. Corn is sown in drills generally for this purpose. Some feed bran in addition. Pure living water in abundance,

coming either from running springs or raised from wells by wind power, is indispensable. In Winter the stables are kept clean, well littered, and ventilated. The time and manner of feeding, the quantity of feed and exercise in open air are all appointed and adhered to with scrupulous regularity, and care taken not to over nor underfeed. Stock must have an abundant supply of water fresh from the bottom of the well, in the barn yard. Following these directions the most satisfactory results are always produced.

REARING CALVES.

As the dairy stock needs replenishing from time to time, and as it is difficult to meet this want by purchasing cows, I consider it quite an important item in the business to rear calves to supply this need. I select the best calves from the best cows. I take the calf from its mother when three or four days old and feed it all of her milk it will take up to one gallon twice a day. When two weeks old it may, if thought desirable, be fed partly on sweet skimmed milk, and if the calf is large and hearty, the quantity may be increased, but it should never have enough to prevent its coming to the next meal with a good appetite. If this should happen, the omission of one meal will usually remedy it. A little fine hay in Winter, or fresh grass in Summer, should now be put within its reach. At four weeks old a little sour milk or butter-milk may be added, and the quantity gradually increased until, at six or seven weeks, it may be put entirely upon that diet, with the hay or grass. A handful of oats should now be placed before it, and that grain also gradually increased as fast as it will eat it.

Each calf should be loose in a pen by itself, with a good, dry and comfortable shelter, Summer or Winter. If it is a Winter calf, it may be turned out to pasture when the feed is good in the Spring. If it is a Spring calf, it must not be turned out until cool weather, and upon fresh Fall feed. At whatever season calves come they should be fed and treated so that they will make a steady growth from birth to maturity. Heifers of good size may drop their first calves at two years old. I

believe it is considered the best time for the developement of the milking qualities, though it may prevent them from making quite so much growth.

The marketing of the milk must depend upon circumstances. If you are within a convenient distance from a city, it may be shipped there, or taken to butter and cheese factories; or another plan, and which, I think, the best of all for one who desires to operate in the most independent manner, is to make it into butter and cheese at home, using the skim milk, buttermilk and whey for feeding calves and hogs.

A good course for a novice to follow in order to post himself in the building, furnishing and managing of a private creamery, is to visit the best ones in the country and study up the matter in all its details.

GEORGE W. DEAN,

ADAMS, ADAMS COUNTY.

Depends Upon Hogs and Corn for Profit — Constant Aim to Keep the Land in a High State of Cultivation.

I divide my farm, which contains over four hundred acres, into corn, wheat, oats, meadow and pasture lands. My principal crop is corn, which, when raised and fed out or cribbed, costs, on an average, about twenty-seven cents per bushel.

CORN.

My manner of raising corn is as follows: I plow the ground as early in the Spring as the season and the condition of the ground will permit. I never plow in the Fall for corn, except when the ground is sod, stubble or very trashy, in which case I plow deeper than in the Spring. If, when it is time to plant the corn (which is as early as possible), the ground has become hard by heavy rains, I take a pair of double corn plows and ridge it up in ridges four feet apart, then cross these at right angles with a two horse corn planter, and plant the corn in the ridges. The corn will come up

quicker thus treated than any other way, as the sun will have more effect on it. But if the ground is in good order, I pulverize thoroughly with a heavy harrow to destroy all the weeds that may have started, lay off with a sled, and plant as before.

After the corn has been planted, and a few days before it comes up, I harrow thoroughly; there is no danger of injuring the corn, but this will leave the ground clean and in fine condition. I select seed in the Fall, when gathering corn, and keep it in a dry place.

When the corn is two or three inches high I take a pair of double plows (I use no single ones, except in stumps), and run as close to it as possible, without tearing it up, plowing about two inches deep, and throwing the dirt from the corn. About a week or ten days later, I take two horse cultivators and run crosswise of the corn, putting them in deep and throwing as much dirt to the corn as it will bear. Again, after a similar length of time, I cultivate lengthwise. The corn is now large enough to "lay by." I take the double plows again, and throw a big ridge to the corn by plowing deep and cutting out all the middle. Now it is harvest, after which I never plow corn, unless planted late. I have never failed on a corn crop.

SMALL GRAIN.

I make no specialty of oats, raising only enough for our own use. I sow as soon as the ground will permit, because early oats are always the best. It pays to put them in well.

I grow wheat more for changing the land, than for profit, yet for the last two years the crop has been remunerative. I sow mostly on wheat and oat stubble, plowing as soon as possible after harvest—giving the hogs time to clean it up. I pulverize thoroughly by harrowing, and roll or drag to make the ground solid; then, with a drill, sow one and three-eighths bushels to the acre, between the 10th and 25th of September.

We have thus far used the "Marsh Harvester" for cutting grain, with success. I usually stack wheat, believing it better to go through the sweat in the stack, which takes about four weeks.

I have never been able to make an estimate on the cost of growing a bushel of wheat. While I am not sure that I have made much money on it, I do know that others in Adams county have made fortunes.

HOGS.

I mainly depend on hogs and corn for profit. These I market three times a year, to wit: Fall, Winter and Spring. I put my hogs on clover about the first of May, let them run until harvest is over and grain stacked, then turn them on stubble. About the fifteenth of August I commence feeding old corn, lightly at first, gradually increasing to as much as they will eat up clean. I slop them once a week with bran and shipstuff, and keep a trough in the pen in which there is always salt and wood ashes. When green corn begins to get hard, I cut it up and feed with the old corn, scant enough so that they will eat most of the stalk. About the tenth of September I turn them on a piece of corn, eight or ten acres to one hundred hogs: when this is cleaned up, I feed on this ground thereby saving all the manure.

During the month of November I sort out about one-half of our fattest hogs, which will weigh three hundred pounds or more and sell them. The remainder I feed till about the holidays and sell them for Winter packing. The pigs have all this time been running with the fat hogs. I now sort out all the best feeding barrows (leaving all the sows to breed from) and continue to feed them until about the first of April when they will bring the best market price. When I am ready to sell, I never wait for a higher price, and in some of these sales I usnally hit one or two good markets. I sometimes buy and make a February sale, which, with us, is the most remunerating. I always make eight pounds of pork to one bushel of corn; it is not safe to calculate on more, especially when I buy the corn. For all markets I prefer the Poland China crossed with Berkshire. I have my pigs come as near the first of May as may be.

HOG PEN.

My hog-pen is a long ten-foot shed east and west,

covered with rough boards sloping to the north, so that it will have the benefit of the sun to the south, and having a five-foot lane in front. I divide this shed into stalls, each five feet in size, and having a gate, so that when a gate is open, the lane is closed. By means of a pen at one end, I can drive a hog into any stall that I desire. A few days before the time for the sows to pig, I put one of them in each of these stalls bedded with clean straw. They are thus almost sure to save their pigs. I keep the stalls clean, disinfecting occasionally with air-slacked lime. When the pigs are about two weeks old, I let them all run together as they will grow faster with exercise, and slop them daily until I begin feeding hogs in August. In all cases I provide a comfortable sleeping place for my hogs, as well as a good place to feed.

CATTLE.

I keep only enough cattle to consume the roughness of the farm, always have a straw stack to which they can have access for shelter during Winter, and feed them well in the Spring, fattening on grass. I also keep a sufficient number of cows to supply us abundantly with milk and butter.

ROTATION OF CROPS.

My constant aim is to keep my land in a high state of cultivation, by hauling all the manure that can be gathered on the farm, twice a year, scattering it in the Fall on the wheat land, on corn ground in the Spring; and by pursuing a system of mixed husbandry. Of my farm entire I have one hundred and fifty in corn, ninety in wheat, sixty in oats, and the remainder in pasture and meadow. I never run land in corn more than three years in succession, then follow with oats, wheat, and clover; the latter of which is one of the greatest fertilizers in the world.

My wife superintends the household, the garden, and the poultry, always holding herself responsible for a good meal. Economy in the house, as well as on the farm, is one of the secrets of success; almost any farmer can make money but not every one can save it.

Adams county is one of the best in the State and equal to any in the great Mississippi valley. The southern part is especially adapted to wheat, though fruit is grown largely and successfully.

JESSE W. FELL,

NORMAL, McLEAN COUNTY.

Willow Hedges or Salix Alba.

First, what kind of willow is best? White willow, known by various names, as gray willow, powder willow, Huntington willow, French willow, etc. It was imported into this country from France, by Irenee Dupont, the grandfather of Commodore Dupont, for the manufacture of the finer grades of powder, in the year 1800, and has been extensively raised for that purpose, in the vicinity of Wilmington, in the State of Delaware; from which neighborhood I got my first supply. It is extensively raised on the Continent and in England. An English work of authority — Chamber's Encyclopedia — says of it, Volume 10, page 206: "It is of large size, and remarkably rapid growth. The wood is used for many purposes, being remarkably durable, especially in damp situations. * * * * * * It was anciently used for shields. Cork-cutters employ it for whetting sharp-edged implements. It is used for paddles for steamboats, because it wears better in water than any other wood. * * * It is by far the largest species of willow known in Britain. It attains a hight of eighty feet," etc. Have myself seen trees higher, and four feet in diameter. It makes excellent lumber for siding, inside work, etc., and splits equal to any timber grown, and yet holds a spike or nail remarkably well. Have seen fences made of the split rails that have lain in the fence more than forty years.

But, it is asked, if it grows so large, when crowded into a hedge will it not, more or less, die out? Perhaps so, if planted too thick. By planting not less than two feet apart, and interlacing the limbs, it will last a long time as a hedge,

or stockade, provided you cut it down at a proper hight. I prefer, however, in view of the rapid destruction of our timber supplies, and the value of this wood when grown, to give it more room, and after three or four years growth reducing the number of stalks or branches to one to every two or three feet, and if needs be, attaching thereto a barbed wire or two to turn stock.

WHEN IS THE BEST TIME TO PLANT?

If the ground is properly prepared and you plant deep enough, by all means plant in Fall, say November. By so doing the cuttings or poles—as the case may be—retain about them a greater amount of moisture and are in a condition to start earlier in the Spring than if then planted. But in a soil like much to be found in the West, that is wet and heaves, care must be taken that the cuttings, which of necessity are generally used, are put deep in the ground. If put under the surface entirely, so that in the Spring you have to shake off some of the top earth so as to expose the tips, all the better. The cuttings too, should be a good size, about ten inches long and at the small end about half an inch in diameter. Of course Spring plantings will do well, but I would prefer the Fall, if practicable, for reasons stated.

PROPAGATING FROM POLES.

I invariably prepare my ground well by deep plowing, as for corn. Then run a furrow where I want my hedge or trees to stand, and on the bottom thereof lay down the poles, bringing the tips in contact. This being done, I plow another furrow on top of the poles, or plow back the one already thrown up; in doing which, so gear the horses that they will stride the furrow, instead of the off horse walking, as is usual, in the one cleaned out, as by so doing the poles will be displaced. If this is done in the Spring, I proceed at once to uncover, with the back or corner of a hoe, so much only of the earth, by raking across the furrow, as is necessary to let in the light wherever I want a tree. Ever so small an opening, so I reach the pole, is sufficient. This will develop plants

that will grow with great rapidity, whilst the balance of the pole, kept in the dark, will be converted into a trunk-root, and have very numerous laterals. In the greater amount of substance from which the young plants derive their nourishment a greater growth is had, whilst the certainty of their growing is about absolute, provided the poles are good when set and are kept in place. If the planting of the poles is done in the Fall—October or November—the openings should not be made till in the Spring. The size of the poles laid down, vary from two to ten feet in length—the longer the better so they are tolerably straight—and not less than half an inch in diameter at the small end.

In conclusion I may add it is only such as have old plantings or who live near by those who have, who can profitably use the poles, as the cost of transportation is too great, besides the ordinary cuttings, if of good size, will do well.

D. GOW,

COBDEN, UNION COUNTY.

Fruit Gardening — Operated Upon Shares — Cold Frames — Flue Hot Bed — Lettuce — The Enemies of Plant Life — The Remedy — How to Pack Fruit Honestly — Spinach.

In the Winter of 1855 I migrated from New Jersey to this county with a view to raising early garden products for the supply of the Chicago market. Being a practical gardener and fruit grower, and seeing the many advantages which this hilly country possessed with its newly opened up railroad shipping facilities to Chicago, I at once began gardening operations on a side-hill between the towns of Anna and Jonesboro, and raised my first crop of tomatoes in Illinois from eight thousand plants. From this quantity, together with a few peas, beets and cucumbers, I realized a net profit of a little over twelve hundred dollars.

The second year I had one competitor in business, but he,

being a tailor and clothier, wholly inexperienced in horticulture, signally failed and left in disgust.

From this small beginning there has grown up an industrial commercial trade of such magnitude that at one station alone (Cobden) there have been loaded and dispatched in one day, twenty-two carloads of perishable fruit and vegetables; and, instead of mine alone, there are at least one thousand families supported from this business. In 1861 I bought my eighty acre homestead, located one and one-half miles east of Cobden. In 1862 I bought forty acres adjoining, in 1864 forty acres more, and so on, until I now have six farms, on five of which I have tenants operating on shares. These tenants have each a span of mules, the necessary agricultural implements, and from fifty to one hundred hot bed sash and hot beds, managed about as my homestead farm, the detailed method of which will suffice for all. The principal crops now raised are lettuce, spinach, tomatoes, nutmeg melons, squash and cucumbers. All except the spinach are raised under glass, thus necessitating the use of hot beds and cold frames.

COLD FRAMES

are made by simply attaching boards on edge, end to end, to stakes set in the ground in two parallel lines east and west any convenient length. The boards on north or upper side of frame should be fifteen inches wide, those on south side twelve inches so as to give greater slope to the sash. The hot bed sash are made of two inch pine, with five rows of six by eight glass, being three feet one inch in width, and six feet five inches in length, which when placed upon the frame already described, constitute a cold frame.

LETTUCE.

About the first of October, in each year, lettuce seed is sown, and as soon as the plants are large enough to be conveniently handled, they are set in the cold frames, six inches apart, and covered with the sash, where they remain during the Winter, growing a little every warm day and requiring little care or attention, except an occasional airing in warm

weather. This crop is generally fit for market the following February and March, when it is cut and washed, packed in cases, and sent by express to market. These cold frames are thus emptied by the last of March, and are again filled with plants of another species. In the neighborhood of large cities, where a plentiful supply can be obtained, hot-beds are made of stable manure, but here where that article can not be had in sufficient quantity, while wood is abundant, I have resorted to *Flue Hot-beds* heated artificially and built as follows:

FLUE HOT-BEDS.

On an eastern slope I dig a trench about three and a half feet wide by two and a half feet deep, and some eight feet long. In this excavation I build a fireplace sixteen inches wide and sixteen inches high walled up with stone and having a stone cover. From the end of this fireplace two smaller trenches are dug (diverging till they reach five feet apart on outer edge) walled and covered with stone, making two flues about ten by twelve inches, running parallel the whole length of the bed and connecting with a chimney, constructed of four boards nailed together, at the farther end. Care is taken that the stone covers on the two flues shall not project beyond a width of five and a half feet, so as to admit the sinking of posts to which the boards constituting the frame are attached and on which the sash are placed. In order to secure an equal temperature the full length of the bed, I have earth over the flues next to the fireplace about two feet deep, and at the further end, nearest the chimney, not quite one foot. I have four such flue hot-beds each holding twenty-six sash, in one of which I sow annually tomato seed about the middle of February.

TOMATOES.

As soon as the tomato plants have their rough leaves fairly developed they are transplanted into the other hot-beds, three inches apart, where they remain until about the first of April. They are then removed and set six inches apart in the cold frames made vacant by the previous cutting of the lettuce. In this

latitude I have found it a safe rule to retain my tomato plants in the cold frames till the first of May, when all danger of killing by frost is past; then I begin to remove them to the field. I cut out each plant separately in a ball of earth six inches square, containing the largest portion of the roots, and remove to a sled or low frame improvised for the purpose, on wagon wheels; then haul to the field, where the soil having undergone the necessary preparation is checked off five feet square. I place the plants in the checks, draw a little earth around the balls, scattering a handful of superphosphate close to each but not touching the roots, draw more earth up, tramping firmly, and so cover the ball at least one inch, sufficiently to steady the plant in its new position. Through careful selection and hybridization, this vegetable has so increased in size and productiveness, that it has become necessary to stake each plant, so as to prevent rotting of the tomato by contact with the ground. From twelve to twenty years ago, I used to realize a net profit of one hundred dollars from each thousand plants; but now, the supply exceeds a profitable demand, and the crop, as a whole, scarcely pays expenses.

As soon as the tomato plants are all removed to the field, the stakes already spoken of, which are made of white oak split two by two inches, and six feet long, are hauled through the field and left in convenient position for distribution, one to each plant. One person sets these stakes in position close to the plant, while another follows with a light mall and drives one end of them from six to ten inches deep into the earth. The plants are then tied to these stakes and must be tied at least from four to six times during their growth to keep their vines in an upright position, so as not to shade too heavily the fruit already formed from its earlier blossoms.

EARLY CULTURE.

The old adage, "The early bird catches the worm" is true here, even in horticultural pursuits, notwithstanding that many fruits and vegetables are sent from the South, long in advance of our natural season for like products, I still find that

my first and earliest products are the most remunerative. I therefore resort to artificial means to hasten the maturity of my productions. In my efforts to catch that worm I build my hot-bed flues, and in the hot-beds raise tomatoes, nutmeg melons, cucumber and squash plants, and transplant them into the field, so as to have the fruits thereof some ten days or two weeks in advance of open air culture.

MELON, CUCUMBER AND SQUASH

seeds are first planted in quite small boxes, four by four inches by three and a half inches deep, and one-sixteenth of an inch in thickness, and placed in hot-bed about the tenth of April. Care is taken to keep the plants from those seeds sufficiently protected from sudden changes in the weather, and I keep them growing in a warm, congenial atmosphere, until the rough leaf of the melon plant is as large as a silver dollar, when they are ready for the field. The melon plant being more sensitive to change than the others greater care is necessary to avoid disturbing the rootlets in process of transplanting. As these boxes are only one-sixteenth of an inch in thickness, generally made of poplar timber and, having been imbedded in earth in the hot-bed nearly a month, are partly decayed, and as it is of little consequence whether the bottom of the box is removed when transplanting, only the sides of the box should be removed. These boxes should each contain two or three strong, healthy plants (which are enough for one hill), to be planted in the checks of rows laid off five feet square, supplied with the fertilizer and treated as described for the tomato. What is said of the melon plant, will apply to the squash and cucumber. I have in this short description marketed the lettuce crop and have the tomato, melon, squash and cucumber plants all in the field. Now comes the battle with the enemies of plant life, and especially with the yellow-striped melon bugs. They generally make their appearance three or four days after the plants are in the field, find a secure hiding place underneath the dry top earth around the plant, and on underside of the leaves. They are present in such numbers that if not

disturbed for three or four days, the whole field of plants will be devoured.

REMEDY FOR BUGS.

The best remedy I have yet found for these pests, is a sprinkling of liquid manure from my liquid manure cistern, and while the leaves are yet wet with the liquid, to sprinkle them over with land-plaster. If the weather is showery, the application may have to be repeated, but as the application itself is a good fertilizer, nothing is lost by its repetition. The bugs being disposed of, nothing now remains between you and good crops but *thorough cultivation* and frequent light showers, not dashing showers, as these wash the pollen off the blossoms and prevent fertilization. Thorough cultivation implies a complete and repeated stirring of the ground between the rows with plow and cultivator, and around the plant with the hoe while the plants are young and newly transplanted. As the roots spread rapidly through the soil, care should be taken not to cultivate too closely to the plant as this will retard the ripening of the crop.

MARKETING.

Cucumbers, squash and tomatoes are ripe and fit for market about the 15th or 20th of July, but the melons are a month later. Tomatoes are packed in boxes five inches by eight inches and twenty-two inches long, holding one-third of a bushel. The size of this box is so suitable for early apples, tomatoes and peaches, and has been in use for some fourteen years without deviation in size, that its character and use is generally established.

Cucumbers, squash and melons are now packed in a very suitable and convenient case, introduced by me in 1879, and so generally approved by growers, commission men and dealers, that its future use is conceded. It is made with two ends (called heading), twelve by twelve inches, five-eighths thick, of sound poplar, dressed on one side, and eight lath, two on each side, cut one-quarter of an inch in thickness, five inches broad and eighteen inches long; thus I have a case that holds one dozen of first class white Japan nutmeg melons, that is

twelve by twelve and eighteen inches long. When packed in the case, each melon can be plainly seen, which I think is inducive to honest packing.

By the end of August these crops are all marketed and the land again plowed, covering all the vines and weeds preparatory to the sowing of spinach about the middle of September. The land now receives whatever barnyard manure I have collected on the farm, as well as that which I have brought a distance of forty miles by railroad. This manure is applied at the rate of about twenty two-horse loads to the acre, and is plowed under, the surface of the land being made mellow with the harrow; when it is ready for the seed.

I then sow ten pounds of spinach seed broadcast over each acre, and lightly harrow so as not to cover too deep. This crop is so easily and extensively grown, and so uncertain in its financial results, that little care is bestowed upon securing it from frost by means of mulching. It is usually sent to market by express, in March and April following, and the crop when cut forms a complete round of vegetable crops cultivated upon my farm.

I have been, and am still engaged in fruit raising, but will only say that the gist or kernel of the business, is the dollar that is in it.

This section of the country is so overstocked with insects, death dealing to trees and fruits, while expenses for expressage or railroad freights and commissions are so great, that little, and often nothing, is left of profit to fruit growers.

L. BACON,

WAUCONDA, LAKE COUNTY.

Dairy Farm — Jersey Cattle — Manner of Feeding a Dairy Cow — How the Milk is Handled and the Butter is made — The Milk Room — Drainage — Open Ditches — Board and Tile Drains.

Nine years ago I began weeding my herd of cattle, testing them and dispensing with all that were not better than average. I bought some cows, raised heifers from my best stock, and when in milk, if one fell below my standard of a good cow, I sold her as soon as possible.

Those of my own raising have nearly always proved superior to those purchased. I find that no cow will do as well when changing homes, and masters, as she will on her original home.

When I had fourteen as good natives as I could well collect for butter making, I purchased a well bred, registered Jersey bull, and raised my heifers, and from that source my present herd.

I pasture in Summer, always feeding something at milking. I raise sometimes a little rye for early feed, also oats and peas sowed together, clover, Hungarian corn fodder, and feed a little to bring the cows in good natured, always milking in the barn. I feed bran and shorts, more or less, during the whole year.

FEED FOR COWS.

I have frequently, when my cows were in good pasture, put a little old hay in their mangers, and have found that they ate it with a relish. I cut hay early, cure slightly in the swath, bunch, and let cure from one to two days, then draw. I cut clover in full bloom, and cure mostly in the cock. I raise oats and peas, grind with corn and mix bran with this. I like to have my feed weigh about one pound per quart, and feed

from four to ten quarts per day to a cow, according to the cow's ability to digest her food.

I grow a few roots, mangolds and carrots, and feed four to six quarts per day to each cow, while they last, usually in February and March; but it would pay to raise enough to feed all Winter, especially if one does not have to hire too much help.

CARE OF COWS.

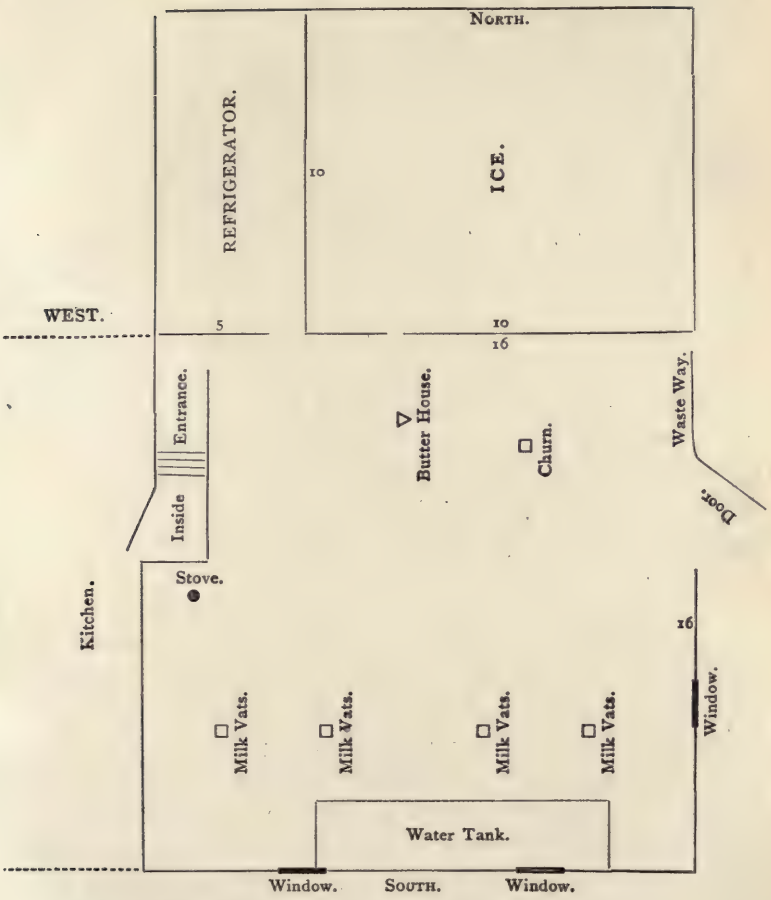
In Summer I commence milking at six o'clock, at each end of the day. In Winter I rise at five o'clock, feed hay, card cows and young stock, breakfast, clean mangers, feed grain, and begin to milk at seven o'clock. After milking, I feed cut stalks or cut straw with shorts, wetting straw and mixing in the shorts. I feed little and often, making them eat all clean. At about ten I turn them out to water, clean the stable, place hay in manger, and leave entirely to the cow how long she shall stay out. If the day is pleasant, I feed straw or stalks in yard, but when disagreeable, feed nothing outside. At three to four o'clock I give some more coarse feed; at half past five clean mangers, feed grain and roots, if roots are to be fed, and milk. After milking I feed cut stalks. For this feed I put by my poorest corn without husking; in fact, I feed considerable of my corn in this way.

I keep plenty of pigs in the yard to root over the manure, and always use some absorbent in the trenches behind the cows, dry horse manure, road dust, or something of the kind, to save the liquid manure.

I have never lost but one cow; this, a two year old, died of inflammation soon after calving. I keep Jerseys only, and their grades, from forty to fifty, and about as many pigs to eat the sour milk and other slop.

As each cow is milked, the milk is strained into cans, and when milking is done, these are carried to the milk room, and the milk strained through cloth into a large pan that holds the milk of all the cows.

The pans, or vats, are similar to those used in cheese factories, but in addition, I have a water-tight cover, ventilated.



Well, with windmill, 16 ft. from milk room.

Windows are on hinges for straining milk through.

There is a verandah over the south end to keep the sun from overheating the room.

Coal is kept under the steps, of which there are but four.

In warm weather I keep cold water running from a large tank in the milk room on the cover, thence under and around the milk, keeping it as cool as desirable. This tank is so arranged that large pieces of ice can be put into it to keep the water cool. The water is pumped from a well into the tank by a wind-mill, which also furnishes water for stock. I skim when slightly acid or before, usually in thirty-six hours, and let cream stand about twelve to twenty-four hours to ripen. I start the churn with the temperature of cream at fifty-eight to sixty-two degrees, according to weather, cooler in warm, and warmer in cold weather. I use revolving churn. When the butter has come to size of wheat grains, I stop the churn, draw off a part of the buttermilk, add brine not warmer than sixty degrees, turn the churn a few times, draw off and continue to wash until the brine runs free of any milky appearance. I let the butter stand in good strong brine from ten to fifteen minutes, then take from churn, weigh, place on butter worker and press out all the brine, leaving the butter moist enough to dissolve the salt readily; reweigh the brine, thus getting the correct weight of the butter, and salt with any good dairy salt, three-fourths ounce to one pound of butter. I work enough to have the salt thoroughly distributed through the whole mass, let stand from three to four hours for salt to dissolve, rework and pack. I use but very little color, and that in Winter, and add the coloring *after* the butter is partly washed, next to the last brine, in which the butter remains for a few minutes. If coloring is used before the buttermilk is drawn off, it requires nearly double the amount to produce the same effect.

The milk room is sixteen by sixteen feet; ice house ten by ten feet, next to which is the cooling room, five by ten feet wide, and having ice over it. The floor of the milk room is twelve inches below the surface of the ground, laid with brickbats on a good clay foundation, and upon this is one inch and one half of cement. The floor has a gradual slope towards the drain. The wall consists of stone three feet high, banked up thus far with earth; and above the stone, the wall is double studded, making two four-inch air spaces, one of which is filled

the same as an ice house. The outside is sheeted, building paper put on, and then sided. Tar paper is put on the studding inside, then sheeted with half-inch stuff, and papered with felt paper. I think lath and plaster would answer as well.

DRAINAGE.

Draining is in order at all times when other work is not pressing. I have paid out some $400.00 for open drains cut with a spade, and find them the most expensive of all, as they soon fill, besides occupying too much room. The banks are always a harbor for weeds, scattering their seeds broadcast over the farm. My plan is, where an open ditch is needed, to plow and scrape the same as if road making, spreading the dirt well back and making a sloping bank that a load may readily be hauled through, or the mowing machine run easily through. Such a ditch is easily seeded with grass, where there is not too much water.

Of course there are places where a team can not be used, then it is necessary to dig by hand until the soil is found firm enough to admit a team. But by all means, use the team to clean the old ditches where it is possible. I have scraped, where once an old ditch had been dug and filled nearly full, eighty rods, two feet deep, and twelve feet wide on top, spreading the dirt well back from one to two rods, in two and one-half days. This was in peaty soil; in hard ground it takes longer, but can be done for about one-fourth the expense of hand digging. I made an outlet this Fall, through hard clay from one to four feet deep (average two and one-half), from sixteen to twenty-five feet wide, spreading the dirt well back, so that a team can be driven through, at an expense not exceeding forty cents per rod. When once a man becomes used to it, he will spread the dirt ready for the plow. I never use the second man, one can do more than any team can stand. I have frequently found it necessary to work at this only half a day at a time, especially in hot weather. This work should begin as soon after harvest as is practicable. Open ditches should be made only as outlets for under-drains.

UNDER-DRAINING.

In under-draining, the tile should have a firm bottom and be placed below frost. I have used boards when I could not get deep enough for tile, and also in peaty soil. Some advocate placing a board under tile, when the earth is too soft for a firm foundation; but I prefer a tube made wholly of boards. This will certainly last as long, and has the advantage of being much cheaper. When the boards rot from under the tile, the foundation is gone. When soft or sandy streaks are met with in clay ground, I prefer to ram in clay and make a firm bottom. By digging the ditch a little deeper, a good bottom can easily be made, and generally requires but little clay.

Six years ago I laid considerable tile with boards, and they have done good service. Tile cost here then thirty dollars per thousand. I have some made square (□) of four inch strips; some ∨ shaped of six inch strips, and some of two pieces three inches and two four inches (▯). For three inch strips I have fencing split in two. In nailing it is a good plan to place a sliver between the boards to secure free entrance of the water. The crack should not be more than one-fourth of an inch wide and this only on the bottom. I have never had any trouble from filling. I always use tile when it can be safely employed. I mention boards, because there are places where tile can not be used, and open draining is inconvenient. If there is water in the bottom, any man handy with a spade and draw scoop can make the bottom all right. When there is no water when digging, first dig the ditch, then draw some water and empty in at the upper end, and the uneven places can be easily discovered and remedied. Where stone is plenty, I dig a small hole two to three feet below the drain, and fill with stone to about one foot above the drain covering with dirt. I always make a foundation at the outlet. If stone is not to be had, use a board and replace with another before the first one rots. Draining will pay a larger per cent. on most farms than any other improvement that can be made. I have had some excellent crops of hay, oats, and corn, where ten years ago were frog-ponds and muskrat houses.

H. J. WHITMORE,

CANTON, FULTON COUNTY.

Boards Better than Rail Fences — Rolls and Harrows the Corn Ground Before Planting — Drainage.

My farm consists of three hundred acres, situated in Banner township, Fulton county, and it is all under cultivation. The out boundary fences are principally post and board, six boards and two posts to the rod. The inside or division fences are made mostly of rails, and require eighteen rails and four stakes to each rod. The board fence is, in my estimation, much the neatest fence, and I prefer it in this locality, for the following reasons. First: Suitable rail timber is very scarce, making it almost impossible to get good durable rails. Second: A rail fence requires much more time and labor to keep it in repair, as it is frequently blown down by strong winds, thus leaving the crops exposed, and forcing the farmer to drop every thing else until the fences are rebuilt. Third: Breachy stock, which are a great trouble to the owner, and a source of unpleasantness in a neighborhood, are invariably the result of fences out of repair. A rail off here or there is too often neglected until the stock gets over, and thus a habit is started that increases until the animal becomes perfectly unmanageable, and the owner becomes only too glad to part with such a creature at any sacrifice. But such is seldom the case with board fences. All this bother, unpleasantness and extra expense to keep fencing in repair is done away with. I use the rail fences for division or field fences, because they are more convenient to move, a very great advantage which rails have over all other kinds of fencing.

I divide my farm into fields, none of which exceed forty acres. A lane three rods wide leads from the barn lots and divides the farm, from which access to adjacent fields can be

had. I use the simple sliding farm gate for entrance to fields, so do not allow a fence to be opened for passage into fields or pasture unless it can not be avoided. I plant about one hundred and twenty acres to corn. I sow no wheat, but put in from fifteen to twenty acres of oats. My oats I sow as early as possible. I endeavor to have part of my corn planted in April. I usually plant one-half of this crop the latter part of April and the other half by the fifteenth of May. I seldom plant later. I plow the ground from three to six inches deep for corn, and roll and harrow the ground thoroughly before planting. As soon as the corn is up I roll and harrow it again. I plow the corn three times, with care, but not oftener than once in two weeks. Should I discover any bad weeds, after harvest I go through the corn with hoes and cut them down.

EARLY SEEDING.

My experience for the past twenty-five years in regard to early sowing or planting is decidedly in favor of early seeding for Spring wheat or oats. I commence as soon as the ground is sufficiently free from frost to admit of cultivation, never waiting long after the frost is out for the soil to dry. The soil is not injured by plowing when wet, if it is plowed early, especially if there should be some freezing after, although the freezing will kill some of the weakly grains and makes the crop somewhat thinner. I will obtain a heavier, better quality of grain by this plan of early sowing. I plow from two to four inches deep, and sow from one and three-quarters to two bushels of wheat per acre, and from two and a half to three bushels of oats. I sow broadcast, harrow and cross harrow, and roll. The amount of seed to sow profitably per acre must be determined by the quality of the soil. If the soil is a dark, rich loam, more seed can be sown with profit than when the soil is lighter and thinner. I prefer plowing in the Fall for all field crops.

My corn crop for the past ten years has yielded over fifty bushels per acre. My oat crop averages about thirty-five bushels per acre. I have not sown Spring wheat within the

past ten years, on account of insects. I have one hundred and twenty acres of pasture land, divided into four fields, also forty acres of meadow land. Cattle do better by changing them from one pasture to another, and the yield of the pasture is far greater. I feed from thirty-five to fifty head of steers, and generally keep from four to seven cows. I have a thoroughbred bull for breeding purposes. I have eight horses for farm work, and generally raise from two to four colts. I do not believe in keeping a surplus of horses. Whenever they are salable I dispose of them, as I find it unprofitable to feed more than necessary. I raise and feed from one hundred to two hundred hogs during the year. I fatten for early market. It pays to feed early, and hogs fatten faster during the pleasant weather in the Fall. I have the best Poland China and Berkshire swine.

I commence to feed cattle about the middle of July, and feed them until the first of November, giving them what corn they will eat, and allowing the hogs to follow after and pick up the waste corn. I employ three hands, usually about the middle of March or first of April, keeping them four months, and also hire one hand for twelve months. I do all my haying and harvesting with these men, and seldom hire extra help for any purpose. It is wise policy to keep the best hands, and pay good wages.

Land in the vicinity of Canton is prairie, sufficiently rolling to admit of easy drainage. It is neither high nor low, but the farmers have been able to raise an average crop in seasons of drouth as well as in an unusually wet season. The soil is a black clay loam.

Fulton county is well located for agricultural purposes. The Illinois river forms the southern, Copperas creek the eastern, and Spoon river the western boundaries. Big creek runs through the center, and the bluffs adjacent to these streams furnish an abundance of wood, coal and stone. The Chicago, Burlington & Quincy and the T. P. & W. roads cross at right angles at or near the center of the county, and through it runs the Illinois river. Thus we are afforded ample facilities for the

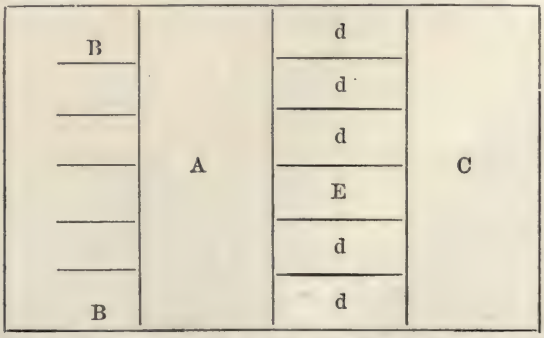
transporting and marketing of produce to and from all parts; and being situated adjacent to Peoria, we have already a market almost equal to Chicago or St. Louis. The great advantages of its location in regard to market facilities can readily be seen, lying midway between Chicago and St. Louis, two hundred miles from either.

DRAINAGE.

The subject of drainage is becoming a matter of great importance to the farmers of this county. Some favor tile drains put down three feet deep. The average price per rod, using from two to seven inch tile, is about seventy-five cents. The difference in the cost of an open drain of the same depth is just about the cost of the tile; but the advantage of the tile over the open drain is certainly greatly in favor of the tile, as the convenience of crossing, and the amount of land reclaimed for cultivation by using the tile in two years, and often in one year alone, will save the cost of the tiles. At least such is the universal opinion of those who have had much experience in the matter of drainage. No greater proof of this is needed than the fact that there is hardly a farm in this vicinity but has at least fifty rods of tile drain now in operation. Tile drains are fast superseding open drains here.

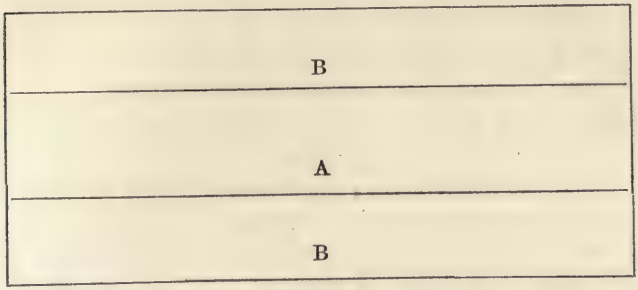
PLAN OF MY BARN.

Plan of barn 32x52 feet, 18 foot posts. The barn has a brick foundation, with ventilator 6x8, and a shingle roof:



A—Drive way. B B—Main stable, 14 feet. C—Cow stable, 12 feet. d d—Granaries. E—Alley, 4 feet wide. Eight feet from floor to hay loft; tight floors over stables and granaries.

Plan for Corn Crib, 26 feet by 40, 10 foot posts:



A—Drive way and wagon shed, 10 feet wide. B B—Cribs, 8 feet wide. A tight floor over drive way, forming store room for light farm implements, seed corn, etc. Shingle roof.

J. C. WARE,

MAHOMET, CHAMPAIGN COUNTY.

Pasture and Clover — Wheat — Oats — Corn — Crops More Than Doubled from Tile Drainage — Hogs and Their Management.

My farm contains three hundred and twenty acres of rolling land, situated on the borders of the Sangamon timber, one-half mile northwest of the town of Mahomet. Forty acres of the farm are covered with a very fine growth of young timber, the remainder is devoted to the production of wheat, corn, oats, meadow and pasture. The crops are all fed on the farm to hogs, sheep and horses, in the belief that the raising of grain for market as a specialty is unworthy of the age in which we live; for it costs to transport one dollar's worth of grain to market ten times as much as it does the same value of animal production. This is not only a question of markets and present profits, but it is also a matter which bears particularly upon the fertility, future value, and permanent productions of the farm. While our soil is extremely, fertile it is an error, fatal to a common

sense system of agriculture, to exhaust that fertility by a constant cropping in some special and continued channel.

VALUE OF OLD PASTURE.

I keep at least one-third of all my land in pasture. To accomplish this, I have fifty acres of cleared land on which there is a thick set, tough sod of blue grass, much better, I think, than can be produced on land that has been in cultivation. This I regard as permanent, and endeavor, by pasturing my timothy and clover fields, meadows, stubble-fields etc., to keep it for Winter pasturage. I am fully persuaded that this fifty acres, when I succeed in saving the Summer and Fall growth, after pasturing for two or three months in Spring, is worth as much as thirty acres of corn with all the labor and expense of the latter's production. In addition to this, I have three fields containing from forty to fifty acres each: these I keep heavily seeded with timothy and clover. I pasture two of them and sow the other two to wheat, in regular rotation. After seeding down a new meadow, to which I usually devote at least thirty acres, I pasture my old meadow two years, feeding on it during the Winter months, to properly fertilize it for the two or three crops of corn that follow. The nature of the soil is of such wonderful fertility that it does not require the labor, care, or expense of preparing compost heaps, making vats for liquid manure, and purchasing fertilizers. But it can not be denied good management, and is improved by rest and rotation in crop. Such a change would be from grain to grass at regular periods. By steadily pursuing this plan my farm, although it has been in cultivation forty years, and was somewhat exhausted by constant cropping when I came into possession of it, has gradually improved, until fields that formerly produced from twenty to forty bushels of corn will, with the same labor and expense, now produce from fifty to seventy bushels per acre.

THE MOST IMPORTANT OBJECT IN SEEDING

a new meadow or pasture, as well as other crops, is to procure a good stand. To accomplish this, after having wasted a

vast amount of time, seed, and patience, I have concluded that there is but one way, and that is by drilling with rye, in September or October, about one bushel of timothy seed to five acres of land, to be followed by four quarts of red clover the following Spring; but not until all danger of hard freezing has passed. I pasture the rye until the middle of May, by which time pastures will be in good condition. The stock must be removed and kept off until the grain is formed; then I pasture with horses, hogs, cattle, or any kind of stock that I desire to fatten. I expect enough of the grain to remain on the ground to make fine feed the following Fall, and a good crop the second year; by this time the young grass will have a good start and may be harvested with the rye for feed, or pastured, as circumstances require. I am careful to allow enough of the clover to go to seed to re-seed the ground, should the old growth be killed by a hard Winter.

CORN.

After grass for pasture and meadow, I regard corn as next in importance; and the idea being that any one can raise corn, I think accounts for the fact that in the greatest corn producing State in the Union, the average yield per acre is below thirty bushels. The few good farmers in every county, whose crops of corn usually average from fifty to seventy-five and as high as one hundred bushels per acre, are standing witnesses that the low average yield of the State is wholly attributable to a lack of intelligent cultivation. The best preparation for corn is to plow land from six to ten inches; the deeper the better when done in the Fall or early Winter. I prefer pasture sod, oats, or wheat stubble, but where corn is to follow corn, if at all possible I plow the stalks under in the Fall, for which purpose I find the

IMPROVED SULKY PLOWS

especially adapted. I am convinced that the advantages gained last year by the use of one on fifty acres of land, upon which there was too heavy a growth of stalks to admit of employing an ordinary two-horse plow, more than paid the cost

of the plow. An increased yield was produced by the fertilizing effects of the decaying stalks, and by the permeation of the soil by the air, snow, frost, and rain during the Winter. Land plowed in the Fall should in no case be replowed in the Spring; but the surface should be thoroughly cultivated with an ordinary cultivator, and then cross-harrowed before planting, which can be done with planter having check-row attachments. I would hire extra help, whenever it is required, to hoe the corn, for I am convinced from observation and careful experiments that fine results can be thus obtained.

When circumstances render the plowing of the land in the Fall impossible, I plow in the Spring a very moderate depth, not more than four inches. I am so thoroughly convinced that extremely deep plowing in the Spring on our prairie soil is not only a waste of labor but an absolute injury to the crop, that I would not allow it done if any one would furnish the team, work gratis and board himself. But whether plowed in the Fall or in the Spring, check-rowed or drilled, success can not be attained

WITHOUT GOOD SEED,

not only as to variety, but also in the manner in which it has been saved. Seed corn should be gathered as soon as the husks on the earliest ears turn yellow, and before frost. Go through the fields and select the choicest ears, then either tie the husks together and hang on poles previously fastened to the barn rafters, or husk carefully and place in a bin with a slat bottom, in the loft of the smoke-house, where the corn can have the benefit of all the smoke during the time the meat is being smoked. I believe that this treatment not only adds to the vitality of the seed, but makes it extremely unpalatable to rats, mice, moles, birds, etc. Planting should be done from the twentieth of April to the tenth of May, depending somewhat on the season. My experience has all been in favor of early planting, for it gives the corn longer time to mature, and the farmer more time to plow. After the corn is planted and just as it begins to come up, the ground should again be thoroughly

harrowed; this has the effect of destroying all the young weeds that are just starting, pulverizing the soil, and letting in the heat and air, thus causing the corn to start with a vigor that remains visible during the entire season. I then first use the cultivator, with narrow shovels set close to the young corn and deep, then follow by frequent plowings with the larger shovels, keeping the ground thoroughly stirred until the corn is about waist high, and throwing the soil to the corn as much as possible. The last plowing should be done by the fourth of July. I regard the "going through" the corn with hoes, after harvest, and cutting out all remaining weeds, as very important, not only for the purpose of clearing the land of noxious growth that would choke out the yield, but for convenience in getting through the field to harvest the crop.

WHEAT.

The yield of wheat in central Illinois, I regard as equal to that of any other State in the same latitude, and think the many failures of this crop are largely, if not altogether attributable to a lack of drainage, an insufficient pulverization of the soil, bad seed, and other causes easily controlled by farmers of average intelligence and enterprise. I have raised wheat for the past ten years, during which time I have had but one entire failure; with that exception, my lowest yield has been thirteen bushels to the acre, and my greatest in the harvest of 1879, which was a fraction over twenty-eight bushels per acre. That season was an unusually favorable one, the yield on some fields in this locality being as high as forty-one bushels per acre. My cleared land, the soil of which is a dark clay loam is better, I think, for the production of wheat, than is the prairie soil; although I have had good success with the latter on clover sod, or land on which the corn has been "Hogged" down—a field on which there has been an early crop of corn, into which there has been at once turned a sufficient number of hogs to eat it, which leaves the ground slightly packed by breaking down all the stalks. If there should be stumps on the ground, as is the case on some of my newly cleared land, which pre-

vent the use of a drill, I sow broadcast and cover the grain by breaking the ground not more than two or three inches deep, after which I harrow both ways until the soil is thoroughly pulverized. I do not allow a large yield and high prices to induce me to sow an acreage out of all proportion to other farm crops, nor to thus concentrate in two months' time the work of a year.

OATS.

I usually devote from twenty to thirty acres of my thinnest land to the production of oats, preferring that plowed in the Fall. If this is not convenient, sow broadcast, as early in the Spring as possible, on land that has borne corn the previous year; usually selecting that intended for seeding with rye and grass the following Fall. I do not break the land, but cover the grain with cultivator, leveling the ground with a harrow. The price of oats at threshing, seldom pays for rent of land, seed, labor, putting in, harvesting and threshing. However, oats are the best feed for farm teams during the Summer season. I also like a good straw stack for shelter and feed in Winter; and the oat stubble gives an additional number of acres for Fall plowing, affording the land an opportunity, in the ensuing six months, to feed upon the atmosphere, which is the farmers' inexhaustible manure heap. At the same time this arrangement gives a greater diversity of labor throughout the entire season.

FARM DRAINAGE.

Although my farm is quite rolling and would be considered by many as being above high water mark, the past few years have but confirmed me in the opinion that success in every department of farm management, including the moral and physical well being of the farmer and his household, depends upon a thorough and complete system of drainage. But few mortals are endowed with sufficient strength and grace to work in mud and water nine months of the year without failing in one and falling from the other.

The digging of tile drains costs from twenty to twenty-five cents per rod. The cost of the tile is from $15.00 per

thousand for two inch tile to $50.00 per thousand for seven inch tile. The drains should follow the most natural channel and should be at least three feet deep. Great care should be taken to procure a gradual fall, from the beginning of the drain to the outlet, and the latter should be protected from stock by enclosing with a rail fence.

It is important too, that a hole should be drilled crosswise through the top of the end tile, into which should be inserted a large wire, supporting a trap door arranged to open outward, admitting an uninterrupted flow of water. This prevents rabbits, skunks, and other small animals from entering the mouth, where they are liable to get fast and die, thus checking the flow of water, and causing the tile to break up if there is a good fall, or fill up with mire if there is but a slight one.

I have no hesitancy in saying that I have never made an investment in connection with the farm that has given such permanent and satisfactory results as that of tile drainage.

Through the north half of the farm, consisting of one hundred and sixty acres of rolling prairie land, there run two main sloughs, connecting with which are three side drains or branches, all connecting in one main open drain on the east side of the farm. These I have tiled with four to seven inch tile, as the amount of water to be carried off seemed to require To rightly appreciate the benefits, it is but necessary to state that, although this land has been in cultivation forty-eight years, in all that time these sloughs have been impassable a large portion of the year, causing the miring of reapers and mowers and consequent delay of work in the harvest; the breaking of wagons and injury to farm teams, and making the hauling of more than a half load of grain, hay, manure, rails, etc., at any season of the year, an utter impossibility. These sloughs have carried on their repulsive bosoms vast quantities of liquid manure and decaying vegetable matter, thereby robbing the adjacent land of the materials necessary to its fertility, and in return producing only doctors' bills, disease, death and taxes. Under the new order of things, I am enabled, if I choose, to

plow east, west, north, or south, a half mile. The sloughs, that were formerly such a source of annoyance, now produce more than double the amount of grass or grain received from the high land. I am thus enabled to start my plows very soon after hard rains, thereby gaining time in the Spring, and getting my crops in, in good season.

Any farmer, of ordinary intelligence, will readily admit that it requires no more labor to produce forty acres of corn, on land that can be plowed from one side to the other, each way, than it does to cultivate thirty-five acres on the same land, with a slough running in an angular direction through it. This being true we lose five acres out of every forty (one-eighth, or twelve and one-half per cent. of all our labor,) on undrained lands.

SWINE.

From my earliest experience as a farmer to the present time, the rearing and breeding of swine has been of great interest to me. I regard this as a source of profit, and I have always taken great pleasure in advancing the quality of any stock that I handle, to the greatest possible degree of excellence; and during seasons of low prices and prevalence of disease I have never relaxed my efforts. For following cattle, I think the Berkshires superior to all others. They are active, and are excellent gleaners. I would also prefer them, were I compelled to keep them in small enclosures.

Farmers who are making a specialty of hogs, and have good range, think the Poland China has no equal, it being a superior grass hog, having large capacity for feed, and produces a greater number of pounds in a given length of time than other breeds. I breed my sows to bring the pigs during March and April, keeping an exact record of the time. I never, under any circumstance, allow the boar to run with the sows. I have had the best success with old sows, except when they were allowed to become too fat. I think they give more vitality to their pigs.

In order to succeed with early pigs, it is necessary to pro-

vide the sows with a warm, dry pen, that will admit the sunshine. For this purpose I built a piggery one hundred feet long and twelve feet wide, floored with two inch lumber, divided into twenty pens. Seven feet of the north side is covered with a roof slanting to the north and open to the south. The sows are put up a week or ten days previous to pigging, and are kept up until the pigs are old enough to follow, when they may be let out, if the grass is dry and the weather pleasant; but they should be kept up until the dew is off, to prevent scurvy, a disease frequently mistaken for cholera, and produced by feeding the sow very sour swill or by the succulent condition of the grass during the prevalence of Spring rains. This disease can be checked by feeding the sow threshed oats and giving astringents in slops, made of shorts and bran, that has not been allowed to sour.

The pens should be kept perfectly clean, and furnished with fresh beds at least twice a week. Pigs can be weaned when two months old. After separating them from the sows they should be given the best of care, and the best food should be provided them. Milk, sweet or sour, and meal, or oats and corn ground together, are excellent, and should be fed regularly three times a day.

As the pigs grow older, and the weather becomes settled, I give plenty of range and exercise, feeding with shelled and soaked corn until the corn is sufficiently matured to feed without waste. I then fence off a part of the field, usually about one acre to every ten hogs, keeping a trough containing equal parts of ashes, salt, and lime, with an occasional supply of coal screenings. I market Spring pigs at eight to ten months of age to give room for the Summer pigs. I allow the sows to run on new corn, as they will thus make a fine growth during pleasant weather. Provided with good shelter and soft feed, they can be taken through the Winter in good shape. My hogs make a good growth on clover, the following Summer, and go into market in the Fall, after having eaten a field of early corn, planted for their especial benefit. It is true that the other grasses will accomplish somewhat similar results, but I con-

sider clover "head and shoulders" above all the rest. In breeding hogs, strict adherence to a well defined system, and a reasonable amount of attention to all details, combined with good judgment, will insure success.

TOP DRESSING.

There is nothing upon the farm that requires more care and judgment than the application of fertilizers. The barnyard and other decaying vegetation constitute our greater supply, while every thing else should be carefully saved.

Experience has satisfied me, that top-dressing newly seeded land, as a rule, is the best that can be done, especially if the land be seeded with clover. One good top dressing will largely increase the production of hay or pasture for several years, and will put the soil in excellent condition for corn, or wheat, or any other grain. A good crop enriches the farmer; a poor crop impoverishes him. It is just as easy to realize an average of sixty bushels of corn, twenty-five of wheat, or forty of barley, which is only a moderate estimate, as to only raise half that quantity, as many of our farmers are doing. If your land is naturally poor, or is exhausted by any means whatever, the first, and only thing, that will make you a successful farmer, is to

GIVE IT FERTILITY AND VIGOR

and then keep the land in that condition, no matter at what cost.

WATCH YOUR LANDS,

and if any spot shows signs of weakness or exhaustion, fertilize it immediately, from your barnyard, or with compost, or clover. Better that your land should be in clover three-fourths of the time, than to raise one poor crop of grain from it. Whatever kind of seed you sow, always be sure that it be healthy and vigorous. This is an important matter, and should never be neglected. It is estimated that the corn crop during the year 1879 in Kane county alone, from planting poor seed, was deficient over 200,000 bushels. This at forty cents a bushel, would

amount to $80,000. At the same rate throughout the State of Illinois (and we have good reason to believe that in many counties the deficit was much greater), we have the enormous loss, by sheer negligence, in the corn crop alone, of over $8,000,000, and yet the mass of our farmers will not learn wisdom.

EARLY SOWING

is also very important and early as well as thorough cultivation, and early harvest is equally so. From my long experience I will only add that all the work upon the farm ought to be done *well*, *early* and *intelligently*.

NO FARMER CAN SUCCEED UNLESS HE HAS GOOD TOOLS,

good teams, good help, good stock, good land, and above all *good management*.

In this prairie land nature has done her part; if the husbandman does his as well, success is certain. Let farmers, then, learn to blame the culture, not the soil. When the crop is raised and secured, the next important question is, what is best to do with it? If the crop is sold in the markets and nothing returned to replenish the exhausted land that produced it, a cruel robbery is committed, and the first step towards the impoverishment of the farm and its owner has been taken. If it be converted on the farm, into stock, beef, pork, wool, mutton, and dairy products, the yield of a generous and munificent soil will in a measure be repaid. While the demands of commerce and the equality of the markets require the sale of large quantities of produce, it is important that every farmer employ as much as possible of it for feed at home. But if it be sold, something else must be used to repay the soil.

STOCK.

The breeds of stock raised should be selected with the greatest care, and then continual improvement towards its highest excellence should be the constant object of the farmer. It costs no more to raise a good animal than one with but little, or no value; while the former enriches, ennobles and dignifies,

the latter impoverishes, weakens and disgraces a farmer and his profession.

BEST BREEDS OF CATTLE.

For beef, the Durhams stand in the front rank; for dairy alone, the Jerseys have attained the greatest celebrity; the Devon is a beautiful animal, hardy and good for either purpose; the Herefords and Holsteins are excellent breeds of cattle, and with proper care are well adapted for beef and the dairy. I have seen many well-bred herds of what is called common cattle, that filled the bill in all its requirements. A herd well-graded up with the Short-Horns would serve the purpose of a mixed husbandry better than any other. First consider the adaptation of your farm and its products, then the main objects of your pursuit; then, with much care and discretion select your herd accordingly. But whatever kind you may choose, bear in mind always, that care and feed are the indispensable elements that make up a good and profitable herd of cattle, either for beef, dairy, or fancy stock.

SHEEP ARE ABOUT THE VERY BEST

animals for a farm. They require dry land, pure water, tight fences, good shelter, good care, and good keep; with these requisites they will much improve the fertility of a farm, and the prosperity of its owner.

Wool and mutton, the productions of the flock, are both very important. If the former be your object, the Spanish Merinos will be your selection. If the latter, the Leicester or Cotswold will serve your purpose best. The first three or four years are the best wool-producing periods of a sheep's life. Their growth is also matured in the same time. Then, usually, deterioration, especially in fleece, commences.

I HAVE ADOPTED THE FOLLOWING RULE.

Early in the Fall I select from my flock every sheep above three years old for feeding purposes, except occasionally a fine stock ewe which I hold one or two years longer. To these feeders I give special attention, fattening them on oats and

corn mixed in equal proportions by measure, and in Winter all the clover hay they will eat, until about the first of May. Then I shear and sell the sheep for mutton, thus turning every sheep at its maturity, while the rest of the flock are all, or nearly all, below the age of four years.

I am raising the Leicesters, which produce a long, fine and strong fibre, generally worth a little more per pound in the markets, than the Merino fleece, but not so heavy; while their mutton qualities are unsurpassed.

PORK.

is a staple and important product of many sections of this Western country. In raising this I find an easy and quick way to convert nearly all the grains, the grasses, and the offal of the entire farm. The hog consumes much that would be an entire loss without him. From the many breeds of hogs I have chosen the Berkshires and the Poland Chinas; for my grade sows I use a thorough-bred sire from each, alternately. The Berkshire give me the muscle, action and endurance, the Polands give the size and the fat, making the best cross, and the best fattening hog I have ever had. None of the females are used for breeding purposes except the very best, in perfect health, while the sire is always selected with great care from some remote herd. Each female is provided with a separate pen or litter at least one week before her delivery. No two broods should be allowed to run together while nursing, unless about the same age, as the stronger will rob the weaker. All deformed, inferior or apparently unhealthy pigs I dispatch at once. The offal from the dairy and from the kitchen, well mixed with oat meal, is the best food for the growth of the pig I have ever used; better cooked than raw.

Hogs must have a full supply of good wholesome food, with clean quarters and a good dry bed. The pig, as he gets age and strength, must have a chance for exercise on dry land, in a pure, healthy atmosphere; a good clover field with a tight fence and dry clean quarters for sleeping is the very best place you can give him; in fact, I regard a good clover field

as indispensable to the health and growth of the hog. Clean, pure water is also an important health measure. Young corn cut up about the time the ears are forming, and later, is an excellent food for making bone and muscle, and to give health. Any or all of the different kinds of grain mixed and ground or soaked in water a day or two, produce good results.

FEED THE PIG

and the growing hog sparingly of corn, as it alone is too strong and heating, liable to cause disease. In the more advanced stage of his life, in the fattening process, corn or corn meal is the best food he can have, and much the better if it be well cooked. A good hog-house, warm, dry, clean and well ventilated, with sufficient capacity to accommodate the herd without crowding is absolutely necessary to success. I raise a hundred pigs, and fatten from sixty to eighty hogs yearly, and while millions of dollars are lost all over this country, by hog disease, my nearest neighbors being large sufferers, I never had a case of it on my farm.

The hog will be filthy if you force him into it, and disease will ensue; but he will be clean, thrifty and healthy if you make him so.

DAIRY AND MANAGEMENT.

I keep a small dairy, from twelve to eighteen cows, stabling them in the stone basement of a large barn, warm in Winter and cool in Summer. I make butter which sells for the highest market price. My dairy-room, or creamery, is 10x20 feet, and is located in the north-west corner of my house, well built, and remote from all infections. I have a water tank in the north end, twenty-two inches deep, through which a current of cold water is continually passing. My milk is immediately set into this tank, in cans eight inches in diameter and twenty-two inches deep. I churn with dog power, and do the dairy work myself. I have an excellent cellar for storage purposes. I raise my calves on skimmed milk, and meal from two parts of oats and one of corn. I fatten a car-load of steers about every other year. My aim is always to raise horses enough

to supply the demands of the farm, and occasionally sell a team; and my buildings are all good, and well located.

THE WATER

for my entire stock is raised from an inexhaustible well, by a wind-mill, into a tank built of stone on an elevated piece of ground and with a capacity of seven hundred barrels. By means of iron pipes it is conducted to my barnyards, hog-house, and two pasture fields that corner near the well, also into my house and creamery—all of which is protected from freezing.

J. M GALE,

BRISTOL, KENDALL COUNTY.

The Soil—Construction of the House—Boss Churn—How to Construct Barn Frames—Dirt Floors—Methods of Wheat, Corn and Potato Culture—Management of Hogs and Cattle—Cost and Prices of Farm Productions.

The farm on which I live contains about 100 acres of land, located on the middle of Sec. 28, T. 37, N. R. 7, east of the 3d P. M. It lies between the Fox river on the east, and Blackberry creek on the west, commanding a fine view for miles around,—the villages of Yorkville and Bristol near by, the Kendall County court-house to the southwest, and to the northeast twelve miles away the city of Aurora.

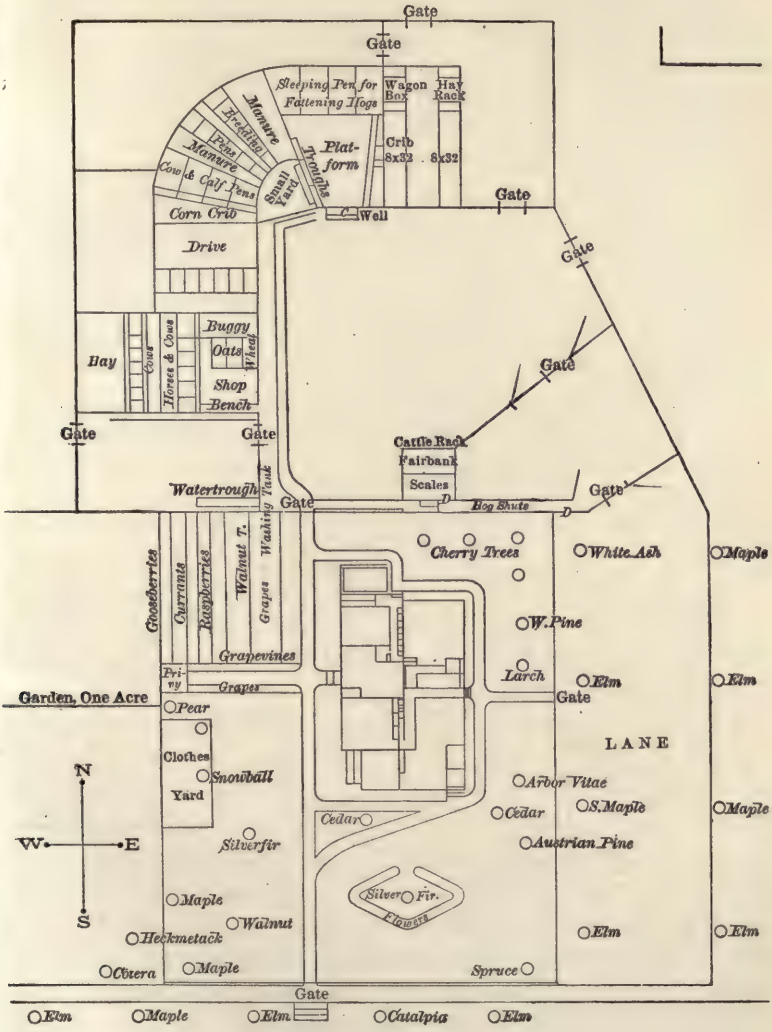
THE SOIL

is dark loam, with clay subsoil to the depth of four to six feet, below which, through sand and gravel, is water, at 12 to 25 feet from the surface. The water is the purest of limestone, cold enough for any person or beast to drink when fresh drawn. The farm has been in cultivation since 1836–38 and 40, without much attention being given to keeping it up, till within a very few years past. I am now recuperating it as fast as possible with red clover and timothy for pasture and

hay, and barn yard manures made and kept mostly in sheds. I consider manures thus made and preserved worth from three to ten times as much as that allowed to leach out doors. The farm is fenced with four and five boards, and two pieces of hedge, about 100 rods in all, and common fence of rails.

BUILDINGS.

To be successful in farming, it is essential to have good buildings, sufficient for the housing and storing of all stock, grain, hay, agricultural and other implements, so arranged as to give the fewest steps, both in and out doors. The plans of my barn and lots are given, from a study of which, I believe that it will be found that they contain very many of these advantages. The buildings have temporary sheds for hogs occupying the space between the barn and double corn crib, with the feeding platform in, on which to feed hogs. My house was built in 1870. It is constructed of wood, brick and stone. The cellar is built with a five foot stone wall, 18 inches thick, and is divided into four rooms with brick walls. One room contains a fire-proof vault for ashes and for smoking meats. The three chimneys coming down to the bottom of the cellar, are set on stone work twice the size of their base. Its cost was about $3,950. It could probably be duplicated now for about $3,000. The superstructure is two stories, of 9 feet and 8 feet 10 inches respectively, pine for frame and for the most part of the finishing. Black walnut for mouldings and panels in some of the doors; butternut and black walnut in others. Black walnut and pine wainscoting, walnut and cherry mixed for newel post, balusters and stair railing. Painted outside with white lead and raw oil. Green paint for blinds. Inside the finish is boiled oil, two coats, thoroughly dried between coats, and a coat of coach varnish, which we have found with nine years' wear to carry a beautiful finish and to stand better than paint. It is easily cleaned by wiping off occasionally with a damp, clean cloth. The position of the doors and beds, two very essential things in constructing a house, is such that the doors will open and lie back out of the way, and the beds


Gate
Gate
Sleeping Pen for Fattening Hogs
Wagon Box
Hay Rack
Manure
Bedding
Peas
Manure
Cow & Calf Pens
Small Yard
Troughs
Platform
Crib 8x32
8x32
Gate
Corn Crib
Well
Drive
Gate
Buggy
Oats
Wheat
Hay
Horses & Cows
Shop
Bench
Gate
Gate
Gate
Cattle Rack
Fairbank Scales
Gate
Watertrough
Gate
Hog Shute
Gate
Cherry Trees
White Ash
Maple
Gooseberries
Currants
Raspberries
Walnut T.
Grapes
Washing Tank
W. Pine
Grapevines
Larch
Elm
Elm
Privy
Grapes
Garden, One Acre
Gate
Pear
LANE
Clothes
Yard
Snowball
Arbor Vitae
N
W
E
S
Cedar
Cedar
S. Maple
Maple
Silverfir
Austrian Pine
Silver Fir
Flowers
Maple
Walnut
Elm
Elm
Hickmetack
Cherra
Maple
Spruce
Gate
Elm
Maple
Elm
Catalpia
Elm

not set against a window. The work was all done by the day, by myself and others, and is a first class job throughout, myself and one other doing the most of the work, including lathing, painting and inside finish. The house is sheathed outside with matched flooring, furred one-half inch, and sided, and grouted in behind the mopboards.

We use wood for fuel, but shall soon introduce base burning coal stoves. Kerosene for lights, but were I now constructing, would use gas, made on the spot from gasolene — there being a machine in use in our township, which has given entire satisfaction for nearly four years.

THE ICE AND DAIRY ROOMS

are constructed in a good substantial manner, but are not expensive.

For dairy tools, I get the best. There are many patents for both churning and butter working.

THE BOSS CHURN

is the barrel, hung by trunnions in a frame having two uprights to receive it, and turned over endwise with a crank, or pulley attached to a horse, or other power. It has the simplest possible device for fastening in and taking out the head, and is probably the best churn extant, there being nothing in it to cut or break the grain of the butter.

FOR A BUTTER WORKER,

a simple tapering tray set on three legs, with front one the lowest, with a large rolling pin, tapered also, attached by the small end to the small end of tray, by a swivel, rolling from side to side over the butter, is equal, if not superior, to any thing yet made. Whatever is used should have no sharp corners to it to cut, or break the grain of the butter. A table counter one side of the room and scales of 150 or 200 pounds capacity about complete the outfit for the dairy house, beside the cans for both the milk and cream.

BARN FRAMES.

Having had some experience in building, and having studied how to obtain the greatest strength and convenience

at the smallest cost, I give the plan of end and side elevation of a barn, framed and built of small or light material, except sills (and even these can be dispensed with, where set on stone masonry, as all good buildings should be), also the floor plan; which can be changed in size to suit the wants of the individual and location.

There are two sets of rafters, one for the roof, the other for tying the building together, doing away with the beams and braces usual in barn frames. The stud should come to the upper edge of the rafters, the foot of one pair being set on one side and the foot of the other pair on the other side of it, made fast with two or more ⅝ inch iron bolts, or of a size to suit the width of the building. The lower rafters, which tie the building, cross each other near the top, their ends being bolted to the upper or roofing pair, as well as at their point of crossing. There will be no get away to them. This makes a self-supporting roof, without beams and braces, which are always more or less in the way in filling, especially if done with the horse fork. The horse fork can be attached under these lower rafters. At the drive way and ends there should be braces as shown in the cut, and if the building is large (such as one 38 by 150 feet, 8 foot basement for cattle, and 22 feet above, belonging to Dexter Severy, at LeLand, LaSalle county), it should have braces similar to the ones shown in the elevations, for supporting the side walls, at intervals of 10 or 12 feet, that they may not be blown in when the barn is empty; and one at the end, or perhaps two, if the building is forty feet wide.

Timbers 2x4, 2x6, 2x8, and larger for heavy structures, can be used, and even fencing for hog and sheep pens, fastened with clinch nails.

I am using dirt floors in drives, and hog pen sleeping apartments are best so filled a foot above the level outside, being occasionally taken out and carried on the land and renewed. Manure sheds and cellars would be better cemented to hold all the liquids, as they are *the best* part of the manure. Cement under horses and cattle with a slope to the manure cellar when possible. It will all pay.

Having as briefly as I could, given the details of my buildings, I will give now my

METHODS OF FARMING.

The farm is divided into four fields with necessary feed lots. One lot is in grass for pasture, and is intended to be kept in good condition for cows the whole season. The cattle are changed into the meadow after the first crop is off and the grass well up. I pasture new seeding late in the Fall if it is rank or if there is not enough of ordinary pasture. In seeding down we now use mostly oats. I prefer to seed with wheat or rye, but as we do not sow much of these grains, we have to be content with oats. I sow thinner than for the best results for the grain alone. There is too much leaf and shade if sown thick that will smother the young grasses out. Half of one large field is put in corn, and the other half seeded with small grain. The next season the whole field is seeded and ready for pasture.

When I wish to seed down my land, I very often plow up but half the field after it has been in pasture two or three years, spreading fifteen or twenty double box loads of manure according to the quality of it.

WHEAT.

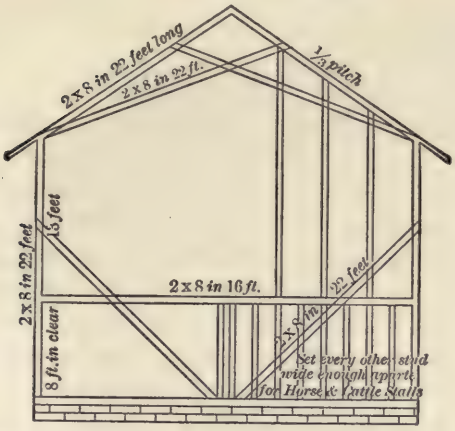
I stir the ground — corn stubble, usually, — about five inches deep, dragging down stalks first, or cutting them with stalk-cutter. Harrow twice, then sow on seed. Follow with harrow three times more, if I intend to seed it to grass, sowing the grass seed before the harrow goes over the last time, and rolling. Three draggings may do on some land, if it is plowed well by the sulky plows. I sow all by hand.

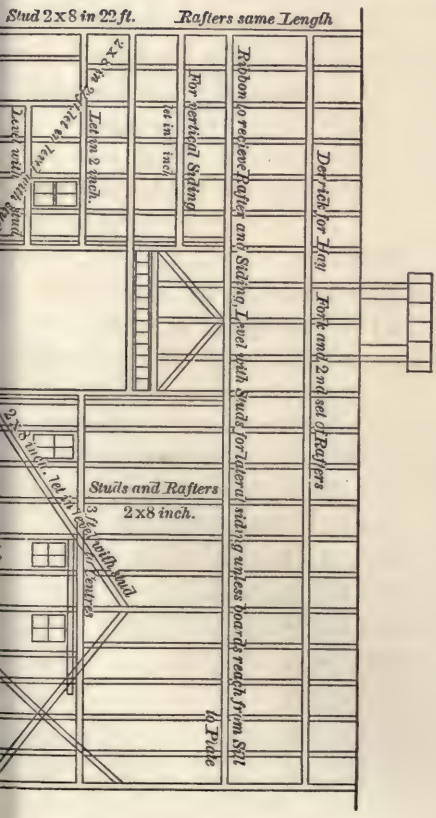
FOR OATS

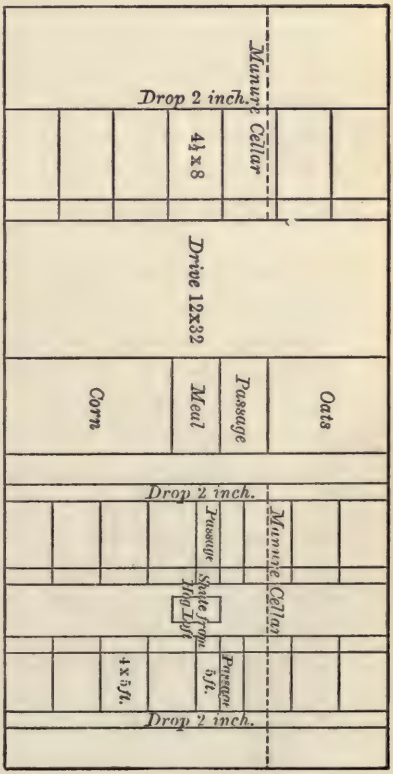
we plow an inch deeper, and finish as for wheat.

FOR CORN

we plow still deeper. If sod, use pulverizing harrow both ways, and before it dries I harrow the first way again. Harrow with Scotch harrow once or twice, just before planting, which, to insure the crop from cut-worms, should be deferred


2x8 in 22 feet long
2x8 in 22 ft.
1/3 pitch
2x8 in 22 feet
16 feet
2x8 in 16 ft.
22 feet
2x8 in
8 ft. in clear
Set every other stud wide enough apart for Horse & Cattle Stalls


Stud 2x8 in 22 ft.
Rafters same Length
2x4
Let in 2 inch.
Let in 2 inch.
Let in 2 inch.
Ribbon to recieve Rafter and Siding Level with Stud for Vertical Siding
For Vertical Siding
Derrick for Hay
Fork and 2 nd set of Rafters
Studs and Rafters 2x8 inch.
2x4 Studs let in 2 inch with Siding for Vertical
to Puke


Drop 2 inch.
Manure Cellar
4½ x 8
Drive 12x32
Corn
Meal
Passage
Oats
Drop 2 inch.
Passage
Manure Cellar
Stable Floor 10 Deep
4 x 5 ft.
Passage 5 ft.
Drop 2 inch.

till near the last of May; I also use a roller. For old ground, use the harrow as fast as plowed, or just the roller simply, each day, as plowed. You will then have no lumps. Harrow thoroughly before planting, to kill any weeds that may be coming up. Plant with well selected seed, picked early, braided, or tied, and hung up in some good, dry place, and if kept, after dried, over the kitchen in the Winter, all the better. Plant plenty of kernels, so as to have enough in the hill, pulling out all but three stalks after they are well started. This will make some extra work, but is far better and certainly every way cheaper than to replant. The practice of farmers of late years, has been to harrow just before the corn gets out of the ground, and afterwards. I have done this, but have come to the conclusion that I will not do it any more, but, instead, cultivate with shovels, set close to the corn, as it is just appearing, turning about almost immediately. I cultivate once a week, if possible, or at least five times altogether, using the double cultivator as long as I can, finishing the last time with a one-horse cultivator, using the hoe the third time over, then thinning.

FOR POTATOES

we want the land in about the same condition as for corn, opening a furrow about three feet and a half apart for the seed, which (if I want the nicest potatoes of suitable size for the table), I cut to one eye, or not to exceed two eyes. These should be dropped in a true line in the bottom of the furrow, just about fifteen inches apart. Cover with a hoe, two or three inches, harrowing the land thoroughly just as the first plants begin to break through the ground. This will also settle any weeds that may appear. When up three or four inches, cultivate the potatoes with double cultivator, coming close to the plants, setting teeth wider apart at each time through. If the ground is lumpy, use the roller before planting, as for corn, and after being harrowed when coming up.

STOCK — KINDS AND TREATMENT.

For cattle, I have high grade Durham cows. Have good

pasture. Stable those to be milked. Tie in stalls, like horses, with rope around neck, and to the middle of mangers. Bed at night with straw, when kept in over night. In Summer they are yarded. Brush off the cows' bag and right side with a coarse brush, before milking, not allowing any dust or extraneous matter to get into the milk pail. With such milk, in a dairy house with good tools, there is no trouble in making the very best butter. The cows get for their Winter feed, clover and timothy hay, and some corn after they have gleaned the corn fields well. Sometimes add a little bran or shorts with regular salting, twice a week.

HOGS — POLAND CHINA.

The Poland China I have had for five years, and like them the best, all things considered.

They have good clover and timothy pasture, running with the cows in Summer. They are given an ear or two of corn, sows and all, twice a day, with occasionally, for sows and young pigs, oats and corn ground and made into a slop, with a little salt in it for an appetizer, together with kitchen slops, milk from the dairy, when not fed to the calves, being mixed in. Salt and wood ashes are set at some seasons of the year, before them, that they may eat at their pleasure from troughs made of two planks, 8x10 inches wide, spiked firmly together, and ends put in of same. I fatten with corn, beginning about the first of September for the Winter market and the first of August for the September market, the hogs being kept in good thriving condition all the time. I have been raising from eighty to one hundred annually for some time, but shall curtail in that branch of farming to about fifty or sixty, and I hope others will do so, too, as the supply seems to be too great.

COST AND PRICES OF FARM PRODUCTIONS.

I have a number of times within my experience in farming (twenty-four years), attempted to arrive at the cost of wheat, corn, oats and pork, our chief productions. The prices of land and labor and the seasons vary so, however, that it is impossible to arrive at exact statements. But I have reached

the conclusion, that with land at $50 and upward per acre, and only moderate buildings, the taxes we pay, the cost of labor and the varying seasons, wheat can not be raised on small farms of 100 to 200 acres short of $1.00 to $1.25 per bushel, corn 50 to 60 cents, oats 40 to 45 cents; and consequently hogs must bring 6 to 7 cents to allow the farmer anything, above the corn they eat, for pasturage and the care of feeding, bedding, pumping water, etc., things not always taken into account by most of us.

All of these things must be taken into the account, or we are doing injustice to ourselves. We should have interest on the money invested in lands, teams, harness, farm implements, stock, a certain percentage for wear and tear and insurance, and reasonable wages for all in the house, as well as in the field.

Agricultural societies used to try to arrive at these results, and our farm journals published their conclusions, but I have not seen this attempted for several years.

THE MIDDLE MEN FIX OUR PRICES.

We practically have nothing to say about it. We go to our market town and simply ask, What are you giving for wheat, oats, corn, cattle, hogs, potatoes, apples?—anything we have. They state the price. We take it, and go back and seek, by good cultivation and harder work, to get or grow from our soil, or additional acres, one-quarter, one-half or double what we raised the previous year, for the same number of persons to consume, and then, after all, have to be content with a still less price for having produced the more.

T. H. BARR,

ARGENTA, MACON COUNTY.

Successful Management of Hogs on Common Sense Principles — Artichokes — Sheep.

I am but an amateur farmer and stock raiser, having commenced my career of farming at the age of thirty-seven years. My business prior to that time had been merchandising and railroading. In 1865 I emigrated from Ohio to Macon county, Illinois, and purchased the land I now own, one hundred and sixty acres of unimproved prairie, excepting that there was a small house on the premises, and about twenty acres were under cultivation. The land, like most land in central Illinois, is very rich, having a deep vegetable loam underlaid by a mixed sand and clay subsoil, moderately flat, with some ponds and sloughs.

When I took possession I contracted a debt of about three thousand dollars, began making improvements and undertook to pay for them, make a living and pay my debt, by raising grain and selling it in the market. It was eight miles to our nearest market, the road to it being such an one as we might select across the unimproved prairie that intervened, which at hauling season was generally very bad indeed.

The result of this grain-raising operation was, that although I raised fair crops and generally got what was considered fair prices, I found in a few years that instead of paying off my debt, it was getting bigger. I was adding something to my convenience by way of improvements, but under the shrinking process of the times, — money getting scarcer, — the land would sell for little more than first cost with all the improvements thrown in.

This state of affairs, I found, must cease, or bankruptcy and ruin would end my career as a farmer. After holding a consultation with my better half (that best of all business

counselors to a man in straightened circumstances), I concluded to turn over, as the saying is, a new leaf. I ordered some improved hogs of the Poland China stock. I handled a few cattle, for the purpose of using up the roughness that would otherwise have gone to waste, but made hogs a specialty, and although I have from year to year sold many for brood purposes, I never realized what is called fancy prices,—the bulk of them having been sold in the usual way. But from the time I commenced to handle the hogs to the present, I have been measurably successful, having lived better, made more and better improvements, and so far diminished my indebtedness as to remove all mortgages and incumbrances from the title to the land, being able long since to pay the balance of my indebtedness. So much for the general history of my operations.

HOGS.

As to my plan of managing hogs so as to have made them profitable, let me say that I have built no expensive hog houses, and have rarely cooked any food; outside of a liberal use of mill-food, consisting of bran, ship-stuff and shorts, five dollars will pay for all condiments,—oil-cake, sugar, and molasses,—fed to my hogs in the last ten years. I have labored at all times to make them comfortable in their pens, studied to keep them well fed, well watered, well slopped, and clear of all filth, both in their food and quarters. The result is that in all that time I have had no touch of the disease called cholera, and little or no "sty fever," excepting that occasionally a few sows after farrowing have been overfed, and as a consequence, the litters would have the scours. I have rarely had a pig or a hog die of any disease. Fifty dollars will pay for all the lumber used in constructing hog houses and pens that I ever built.

I have about a dozen shed pens, six by seven feet, with an open feed floor in front; these pens are for the sows in farrowing time, and during the Winter we use them for sleeping quarters for the store hogs.

ARTICHOKES.

And here let me say a word for the much discussed root, the Artichoke. For the last two years I have made a liberal use of it for Fall, Winter, and Spring feed, for store hogs, and find it to be all one could desire. I allow the hogs to root for it, which they do with a will. Last year my store hogs lived on artichokes, excepting when the ground was frozen, from November first till about the middle of May. This season I have only about thirty-five store hogs; they are now in high condition, fat enough for market, and their living is two ears of corn per head each day and the full run of the artichoke patch. With me the yield per acre is, without cultivation, about five hundred bushels.

SHEEP.

In concluding, I will give my little experience with sheep, and a description of a sheep fold or house I obtained while on a visit in southwestern Ohio. Two years ago I purchased a few grade South Down and common sheep, and used a choice South Down buck on them. The result is very gratifying; the little flock has doubled itself each year, the ewes twinning almost invariably, the yearling wethers, when clipped and taken to the butchers, weighing an average of one hundred twenty-five pounds, and usually bringing three to three and one-half cents per pound gross in our market, and the average clip, for two years past, has been six and three-quarter pounds of wool per head. The feed in Summer is grass exclusively, in Winter hay, straw, and corn fodder, to the general flock. The ewes get, after lambing, till grass comes, a feed of corn once a day. What the actual profit is I am not prepared to state, but my best opinion is, that it pays as well as any other stock one can handle here in Illinois. I find that these grade South Downs are very healthy. The plan of sheep house referred to above will accommodate from three to four hundred, and is as follows:

SHEEP-HOUSE.

The main building is twenty-five by twenty-five, the corner posts being sixteen feet high, to admit of a large hay loft; lower

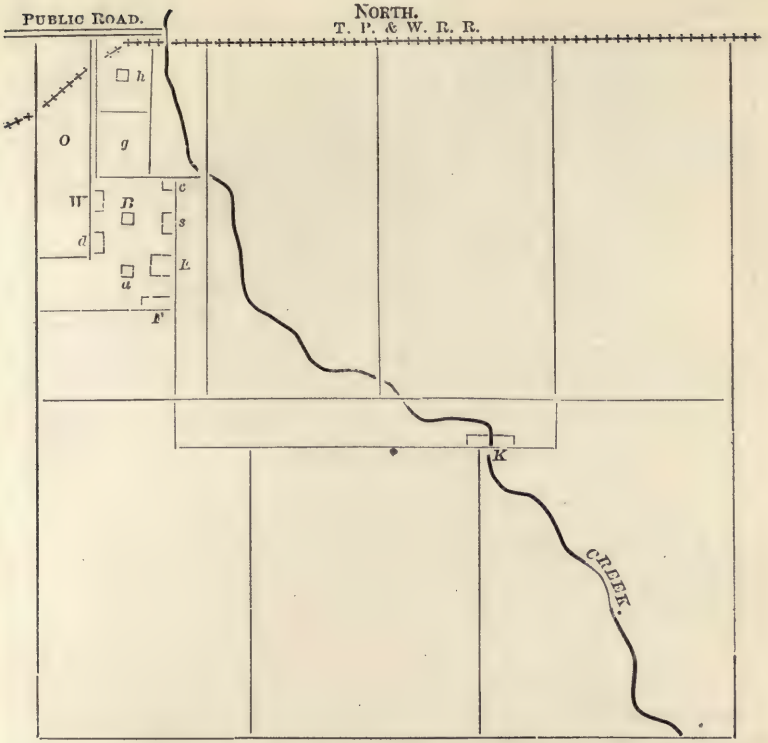
story seven feet, which is used for bins for grain, and part cut off for a room for weak sheep or ewes with very young lambs; on three sides a shed addition is attached, divided into three departments, one for wethers, one for lambs, and the other for ewes with lambs. A slide from the hay loft is constructed of matched boards on the face next to feed room, and the face next to shed is slatted, so as to form a rack for hay. Immediately under the rack is a V trough so as to open inward to feed room and outward to shed, that feed may be poured in for sheep to eat from shed side. The surrounding ground is divided into three lots corresponding with the three sheds. These lots are used for outdoor racks and ranges for the sheep to take exercise in, and if they are large fields, all the better, as the pasture will thereby communicate directly with the sheep fold.

CYRUS SMITH,

CANTON, FULTON COUNTY.

A Well Drained and Improved Farm—Converts Most of the Grain into Beef—Horses, Cattle, Hogs and Sheep.

My farm comprises one hundred and sixty acres of land, situated one-half mile from the city of Canton, being a square tract, one hundred and sixty rods each way, crossed by a small stream of water that enters about thirty rods from the northwest corner and makes its exit near the southeast corner, furnishing an abundant supply of stock water. This is underlaid with six-inch tile the entire length, except six rods near the center of the farm, where the water is forced to the surface for stock. The farm is surrounded by a substantial post and board fence, five boards and two posts to each rod; the inside fences being similar. I use this kind of fencing because it is neat, convenient, durable, and, in most localities, the most economical. The manner in which the farm is divided into fields, etc., can readily be seen by the accompanying map and description, viz.:



a—Corn crib. *h*—House. *g*—Garden. *O*—Orchard. *W*—Wagon shed and shop. *B*—Barn. *d*—Chicken house. *c*—Calf house. *s*—Sheep house. *E*—Cattle barn. *F*—Hog house. *K*—Water trough.

Commencing at the northwest corner are three acres planted in fruit trees; directly east of and adjacent to orchard is the main entrance leading from public road; east of entrance way is door-yard and dwellings; south of dwelling is garden lot; south of garden is barn and adjacent lots, with the location of the buildings on same; east of dwelling is a lot about three acres, for calf pasture; a lane six rods wide leads from calf lot directly south to the middle of the farm, thence the lane is continued east to within forty rods of the east line; from this lane entrances to adjacent fields and pastures are convenient; this lane being adjacent to barn and stock lots, forms a conven-

ient passage way from the same to any part of the farm, also to the watering place.

The character of my farm is not of any one exclusive kind, but my object and aim is to keep stock enough to consume the larger portion of the grain produced on the farm, for by so doing some part of the farm is yearly changed from pasture to cultivation; and this changing, together with the manure that naturally collects in the lots where the stock is sheltered and fed being carted and scattered on the pastures, gives each season a field for corn with fresh fertile soil, which certainly can not be obtained as cheap in any other way. Besides, the frequent changing into pasture aids greatly to keep the land free from noxious weeds which invariably accumulate if a farm is devoted yearly to the raising of grain.

GRAIN RAISING.

I sow from ten to twenty acres of Winter wheat; I sow no Spring wheat unless the Winter wheat kills out. I plow three inches deep, harrow thoroughly, and, just before sowing, go over the field with a stick of timber eight inches square and ten feet long, which pulverizes the lumps and levels the surface, filling up all holes and leaving the ground in such condition that when the seed is sown and covered up, it is of an even depth. I sow broadcast one and one-half bushels per acre. I sow in the latter part of September, and if the wheat kills badly during the Winter, sow the ground with an early variety of Spring wheat. Harvesting costs from $1.00 to $1.50 per acre; the cutting is done by reaping machines, of which there are many varieties, but my experience is in favor of those which carry the binder. These, with two men to bind, one man to shock the grain, and a boy to drive, will readily put up eight to ten acres every day. With these there is no scattered grain left here and there in binding; the scatterings are dropped on the binding table, from which they are gathered and bound in neat sheaf. They save the cost of one or two hands, which is quite an object. I sow about fifteen acres of oats, preparing the ground, seeding and harvesting in the same manner

as for wheat. I plant fifty to sixty acres of corn, plowing no deeper than for wheat (about three inches); harrow thoroughly, and use the same kind of pulverizer just before planting. I use check rower on planter; harrow just before corn comes through the ground. As soon as it is well up, I go through with a two-horse, iron-beam cultivator. I cultivate often enough to keep clear of weeds, and late in season.

STOCK RAISING.

Horses—I keep six horses, and raise usually two colts, aiming to breed from the roadster class. I prefer horses of about twelve hundred pounds weight. I feed but little grain to horses when not working, but keep them well sheltered, giving them free access to stalk fields during winter.

Cattle—I keep thorough-bred cattle (Durhams) for breeding, let the calves that I want for breeding stock, run with the cows until six months old, but calves that I want for feeders I keep away from the cows and raise by hand. I usually milk from six to eight cows. The cows are brought into the cattle barn and fastened by the neck with a chain previous to milking; here they remain until morning, and if weather is stormy, they remain here during the day, except a short time they are let out to get water. I feed milch cows bran and meal; feed also hay or straw for roughness, when they are not allowed to go out in the pasture.

Hogs—I keep from fifteen to twenty brood sows, of the Poland China stock, aiming to have pigs come early in the Spring—not later than April. I feed stock hogs only enough grain to keep them in a thriving condition. I commence fattening Spring pigs the first of October.

Sheep—I keep one hundred ewes, cross breed from Cotswold to Lincolnshire, which gives bigger sheep and finer wool, the wool selling for from one to two cents more per pound. I feed ewes oats and hay; the sheep for market are fed corn. The increase in sheep each year is marketed the next.

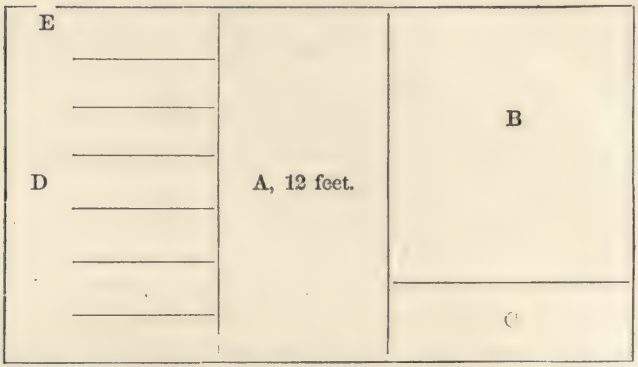
Chickens—I keep two hundred chickens, preferring the light Brahmas and Dorkings crossed. I have house and lot

for chickens, but do not confine them in the lot during the day. They are allowed to wander through the barn and stock lots, and especially in the orchard to look after the insects.

I raise but few turkeys, and those of the Bronze variety.

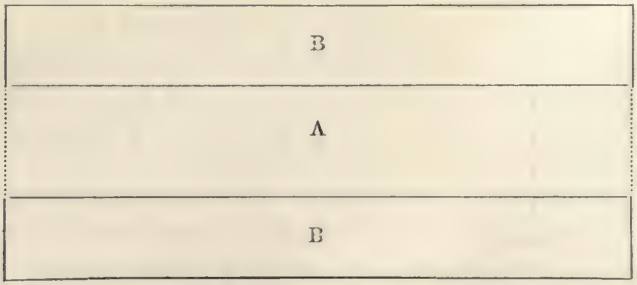
THE PLANS OF MY BUILDINGS.

Ground plan of barn, 42x34 feet, with 18 feet posts; brick foundation, 8 feet from floor to loft:



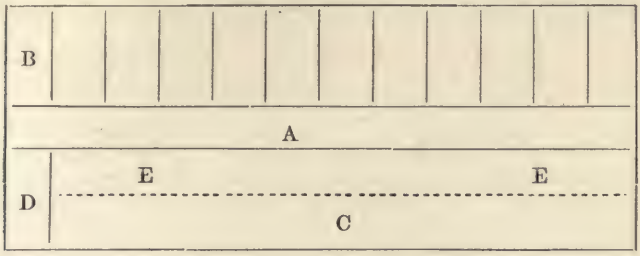
A—Drive way, 12 feet. B—Hay bay, 16x28. C—Corn crib, 6x16. D—Stable, 14 feet wide. E—Entrance, 3 feet wide. Shingle roof, with ventilator on top, 6x8 feet.

Plan of double Corn Crib, 24x32 feet; brick foundation, 12 feet posts:



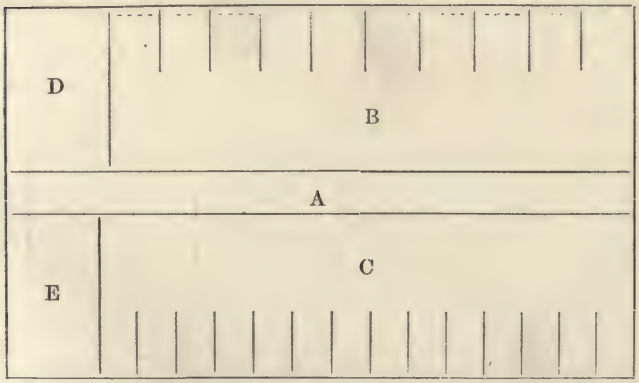
A—Drive way, 9 feet 6 inches wide on floor, 8 feet at top of cribs; difference in width of drive way at top and bottom, to give better circulation of air. B B—Cribs, 7 feet 3 inches at bottom, 8 feet at the top. Shingle roof, with ventilator 4x6 feet on top. Double doors closing drive way, hung on rollers. Double matched floor of inch pine.

Plan of Hog House, 24x80 feet, and 8 feet posts; ventilator on top, 6x8, shingle roof.



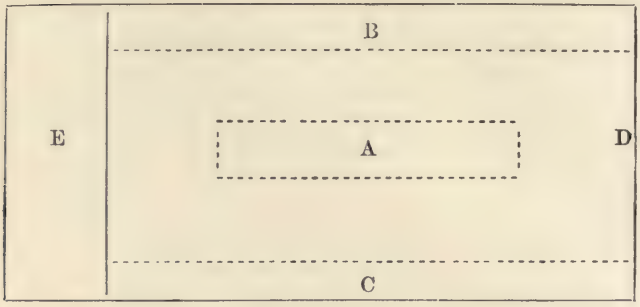
A—Passage for feeding, 3 feet wide. B.—Pens for brood sows, 6½x10, with window in each 3x4, 3 feet from the ground. C—Floor 11 feet wide for feeding on. D—Corn crib, 7x11 feet. E E—Water trough, on main floor.

Plan of Cow Stable, 24x48 feet, shingle roof, 8 feet posts:



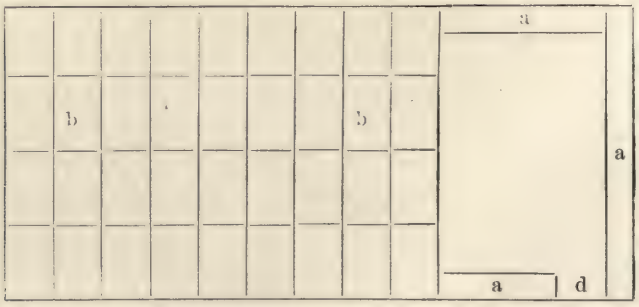
A—Passage for feeding, 4 feet wide. B—Stable for cows, with stanchions. C—Stable for feed cattle, with stanchions, 3 feet wide. D—Box stall for cow at calving time. E—Corn crib, 6x10 feet.

Plan of Sheep House, 24x48 feet, 8 feet posts, shingle roof:



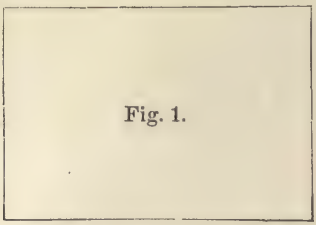
A—Hay rack in center, 4 feet. B—Side hay rack, 3 feet wide. C—Grain trough. D—Double Doors. E—Granary, shingle roof.

Plan of Hen House, 12x20, 8 feet posts. The rack for roost formed by three bars, one end resting on floor at front end of building, the other extending back 12 feet, fastened to cross plate at the eaves.



a a a—Boxes for nests. d—Door. b b—Rack for roosts, with slats 3 inches wide, 18 inches apart. Three windows in front of roost, 3 feet long, 8x10 sash, 3 feet from floor. Two feet above this window, a second window, 10x14 sash.

Plan of Wagon and Carriage House, 20x32 feet, 18 feet posts:



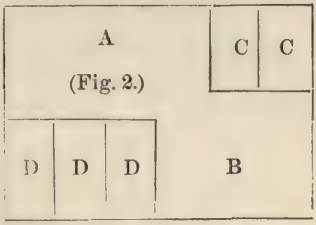


Fig. 1 represents ground floor for wagons, carriages, and heavy farm implements; 8 feet to upper floor, open on front side.

Fig. 2, upper floor of wagon house, 10 feet from floor to eaves. A—Shop. B—Store room for light farm implements. C C—Granaries, 5x8 feet. D D D—Granaries, 5x10 feet.

R. C. MUNGER,

CHEBANSE, IROQUOIS COUNTY.

Shallow Plowing Recommended for Corn — Hog House — Flax Culture — Mules.

I was born and raised on a farm, and began farming for myself in 1858. My farm is situated on Section 14, Township of Milk's Grove, Iroquois County, Illinois. It is in a desirable location for the production of corn, oats, potatoes, timothy and red clover, but the climate is hardly favorable to wheat. My forte has been corn and hogs.

CORN CULTURE.

I have raised quite a number of cattle, horses, and mules, which have paid very well; but in this county corn and pork are kings. I have tried the various ways of planting corn; check row, drill, and in hills rowed one way, but have had most success planting in hills, three feet eight inches in the row, taking out the second drop in the planter, allowing the hill of three to five grains to scatter along the row from six to ten inches, and cultivating one way. This mode I have followed for eleven years without deviating.

My method of preparing the soil is to plow all I can as early in the Fall as possible (the dryer the better for the coming crop), with three good, heavy horses, and plowing as deep as the nature of the soil will admit. I commence with new land, first plowing after breaking from four to five inches, and going one inch deeper each succeeding plowing, until I reach eight or ten inches.

Shallow plowing, say four to five inches deep, I find to produce more corn than deeper plowing in the Spring. For the past eleven years, my corn land has varied from two hundred to four hundred and fifty acres each season.

Each man with team has forty acres of corn and fifteen acres of oats and flax to raise. From the time the plow is started in the Spring until the corn is too large to cultivate, I do not allow the man and team out of the field a single day for anything, unless for rain. After plowing, a good double harrowing precedes the planter; and behind the latter four rows comes a three-horse harrow, with teeth set at an angle of forty-five degrees. Just before the corn comes through the ground, I give one more harrowing, and as soon as I can see the row, I start the cultivator (a good one that will scour) and let it in deep, throwing the earth close to the corn. The first time through is the time to stir the soil and kill the weeds; this will cover up a good deal of corn, but stop and uncover it. The second time through I use a two-bladed scraper with blades two inches wide at the front, and tapering to one inch at the heel. The third time I use the cultivator, but not so deep as the first time. The fourth time I use scraper with addition on heel. The fifth time I hoe and pull the weedy places, if there are any; if not, I make hay. Thorough cultivation is what makes corn. If the cornfield is left to itself for two weeks after planting, it is best to use checkrow, and then if not cultivated thoroughly, there will be weeds in the hill and the crop materially injured.

HOGS.

I usually market from one hundred to two hundred and fifty hogs a year. My pasture, which is indispensable as to

profit and health of the hog, contains eighty acres timothy and blue grass. My hog house is one hundred and ten feet long by eighteen wide, arranged with panels to enclose or divide into twenty-eight departments, with alley in the center. The pens are used for breeding sows, in the month of May. When the pigs are ten days old, I turn into clover pasture.

At the end of the hog house is the wind-mill, with a large tank, which is always full of pure well water. I have not lost a hog with cholera or diphtheria, in eleven years. To make a success in raising pork, we must keep our stock as pure as possible; one cross does very well, but breeding from the cross degenerates and makes an uneven lot. I prefer the Poland China, using a select male, no relation. Sticking to the business through low prices as well as high, I find in the end, I make more money by feeding the corn, than by hauling it to the market.

OATS AND FLAX.

In raising oats and flax-seed, I have had quite an experience. For oats, I plow the ground well, sow the seed before harrowing, then harrow thoroughly both ways, and if the ground be lumpy, or a drouth follows sowing, I roll within two or three weeks after the oats are up.

Flax-seed is a good crop to raise, and a profitable one, if raised on rented land, and the land is new; but the lease must not run too long. It takes the life out of the land quicker than any other crop. I have raised four crops, in all about six thousand bushels, average yield eleven bushels per acre, and average price one dollar and forty-five cents per bushel. I sow eighteen quarts of flax and two quarts of red clover seed. The clover is sure to grow, producing good Fall feed, and the roots are a great fertilizer, helping wonderfully to raise a crop of corn the next season. I have raised my last crop of flax; it exhausts the soil and makes it barren.

CLYDESDALE HORSES.

I have found it profitable to do the most of my team work with good heavy mares, and raise a half-blooded Norman colt. I would prefer the Clydesdale. I raised three colts last year;

the mares a grade Clydesdale, and sire a thorough-bred four-mile running horse. They are large, active colts with clean limbs. They suit me better than any I ever raised before. The coming Spring, I expect, if there is no accident, to raise six or seven more from the same horse. I think it is the right cross for a horse for all work, but the mares must be low and heavy.

MULES.

I have found, after raising thirty or forty mules, that if a man does not want to breed from his work teams, the mule is the team. Mules will work in the dust and heat, where it would kill a horse; they are not nearly as liable to accident or disease, and the grain one horse eats will keep two mules. But the mule will get away with as much hay as a horse, and is not particular if it is musty or has been damaged by rain. My mule teams do more work than my horse teams; they are used as well, thought as much of, and will not eat over one-half as much grain as the horses.

Some have a mistaken idea that a mule colt is harder for the mare to raise than a colt. I always let my colts follow the mares on the farm. The horse colt is with the mare all the time; if the corn rows are a half-mile long, they want to suck at each end, and when weaned, the first year they have to be kept in a shelter with plenty of oats to keep them growing. The mule colt will stay at the barn one or two hours after the mare has gone into the field; then he will take a walk down to the field, take a suck and lie down, or pick grass. When he is weaned, I turn him out with big colts and cattle, and let him rough it till he is three years old; then take him up and break him with the same kindness I would a horse, and he will sell for more money than a five-year old colt. I always was prejudiced against the mule, until I raised a nice span, and drove them awhile. Now I will not drive anything else, and if any of you ever meet "Reub." you will see him driving the yellow mules.

DRAINAGE.

We drain our land mostly by open ditches, using the plow

and scraper to make a sloping ravine, which may be cultivated and plowed across. They have sufficient fall to be kept clean by the Spring rains. The cost of open ditching is from twenty to fifty cents a rod, and they are always in running order, if they are always worked across, allowing no bank to form on each side to grow up to weeds and prevent the water from draining into the ditch. We have no tile drainage, and but a very little land for which an open ditch is not preferable. I think we have as good a farming country as there is in the West, for raising the above named crops, and also for raising stock. My aim is to feed the greater part of my grain to cattle and hogs; the cost of raising corn is about eighteen cents per bushel, oats fifteen. Good farms, with good improvements, are worth from thirty to forty-five dollars per acre.

ARTESIAN WELLS.

As we have no running streams, you may think it is a pretty dry place for a stock farm, but we have what is more desirable. We can go on a dry piece of ground and bore a four-inch hole from ninety to one hundred feet to rock, shove down a three-inch gas pipe, drill ten or fifteen feet, and strike water that rises to from twenty to thirty feet of the surface, put in a pump and a wind-mill, and we have a never failing supply of water.

COMBINED HOG-HOUSE, GRANARY AND CORN-CRIB.

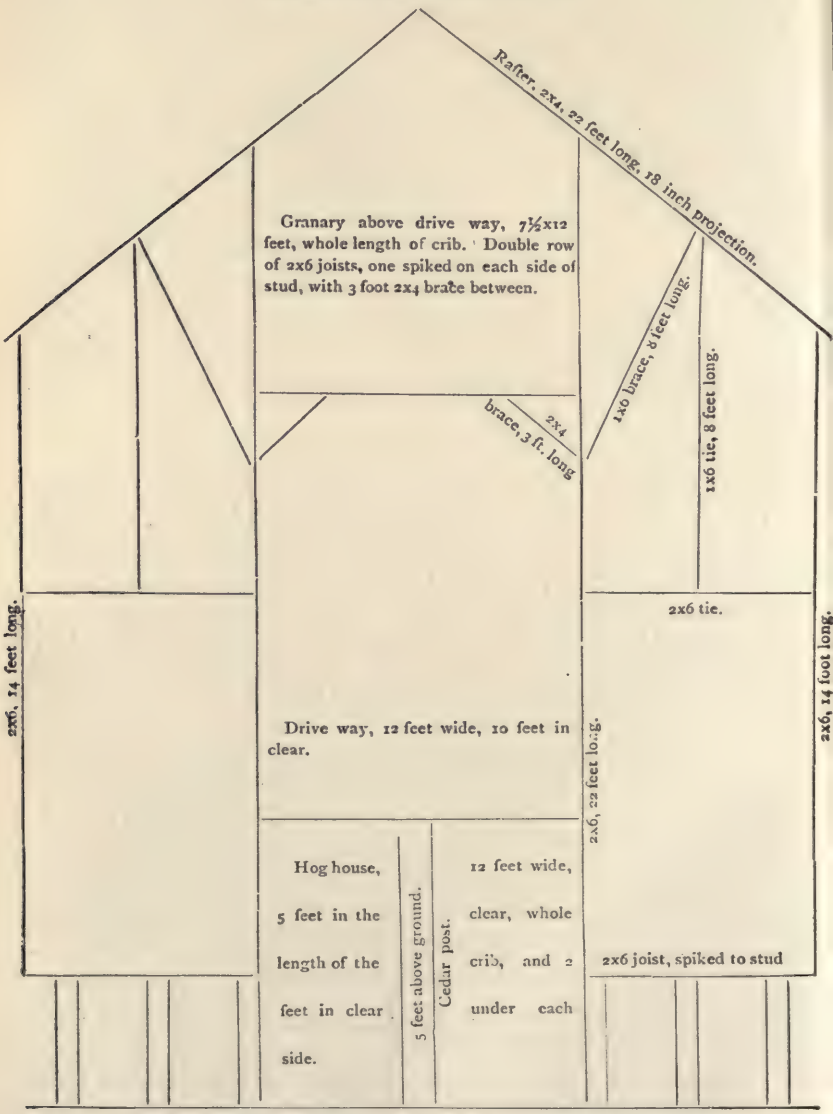
My corn crib is thirty-one by forty feet. Cribs ten feet wide, twelve feet high on the low side, and nineteen feet posts next to drive way. The drive-way floor is elevated two feet above the crib floors. The granary is above the driveway, and the hog house below the driveway floor.

My pastures are fenced with osage hedge, or three board fence with two barb wires on top, making a durable fence, and one that turns every kind of stock.

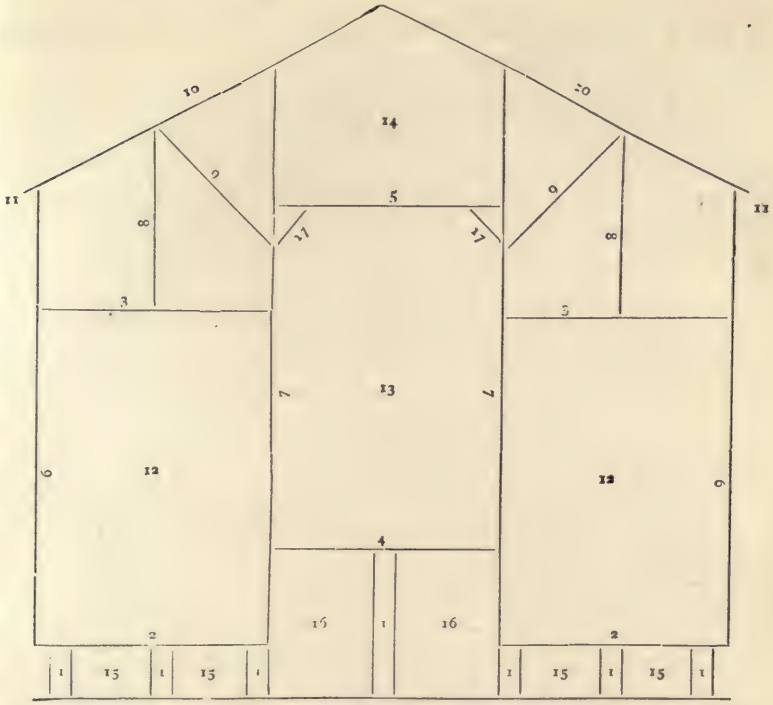
I always sow red clover with every kind of small grain. I have clover hay, clover pasture, and clover to plow under for enriching the land. My treatment of pasture is to sow red

END VIEW OF FRAME OF CRIB, GRANARY, AND HOG HOUSE COMBINED.

32 feet by 40 long, 14 and 22 feet Posts.


Rafter, 2x4, 22 feet long, 18 inch projection.
Granary above drive way, 7½x12 feet, whole length of crib. Double row of 2x6 joists, one spiked on each side of stud, with 3 foot 2x4 brace between.
1x6 brace, 8 feet long.
1x6 tie, 8 feet long.
2x4 brace, 3 ft. long
2x6 tie.
2x6, 14 feet long.
2x6, 14 foot long.
Drive way, 12 feet wide, 10 feet in clear.
2x6, 22 feet long.
Hog house, 5 feet in the length of the feet in clear side.
5 feet above ground.
Cedar post.
12 feet wide, clear, whole crib, and 2 under each
2x6 joist, spiked to stud

Cribs 2 feet above of ground, no sills: outside underpinning set in one foot.



One section of frame, with no sills to catch water and rot out. Each section is set on seven large cedar posts (1), two feet below the surface, and two feet above. Center post five feet above surface.

2—2x6 sleepers, 10 feet long, spiked to 6 and 7.

3—2x6 ties, 10 feet long, spiked to 6 and 7.

4—2x6 sleeper, 13 feet long, spiked to 7 and 7.

*5—2x6 joist, 13 feet long, spiked to 7 and 7.

6—2x6 outside studs, 14 feet long.

7—2x6 inside studs, 22 feet long.

8—1x6 tie, nailed firm to 3 and 10, 8 feet long.

9—1x6 brace, nailed firm to 7 and 10, 8 feet long.

10—2x4 rafter, 22 feet long.

11—One and one-half feet projection.

12—Cribs 10 feet wide, 9½ feet between sleeper and tie (2 and 3). Floor of fencing, ½ inch crack. Floor between studs on angle of one-half pitch ∧ to prevent corn and dirt from lodging.

13—Drive way, floor elevated 3 feet above crib floor; 10 feet long and 12 feet wide.

14—Granary, 12 feet wide, whole length of crib; 7½ feet high on outside, 12 feet high in center; grain elevated at end, or center of crib.

15 and 16—Hog house, 2 feet high under cribs and 5 feet high under drive way, saving all waste corn and preventing rats from working.

17—2x4 brace, 3 feet long, spiked to 7 and 5.

*No. 5—Joist doubled spiking on each side of 7 and 7, with brace (17) between.
Note: Outside underpinning set under the crib one foot. Each section of frame 2 8-12 feet apart from center to center.

clover and change often. I use plows, cultivators, and reapers, manufactured at Rockford, Illinois.

I breed the short-horned Durham and Hereford cattle, believing them to be the best breeds for beef. There has been but little interest taken in raising cattle for milk. This is comparatively a new place, but we have some fine orchards just beginning to bear, and think it is a successful climate for apples, cherries, and the small fruits.

E. M. BOUTON,

GALENA, JO DAVIESS COUNTY.

Stock Farm — Best Feed for Fattening Cattle — Cost of Raising a Three-Year-Old Steer — Care of Breeding Cows — Treatment of Meadows — Hay Sweep — Variety of Food Recommended for Hogs.

My farm, containing two hundred and seven acres, is situated two and one-half miles east of Galena. The soil is a light, porous clay, so porous that it needs no draining, and is well adapted to the growing of corn, oats, barley, wheat, rye, and other crops. It can not be beat for pastures and meadows. Blue grass grows perfectly natural, ousting every thing of the grass kind that comes in its way, not excepting timothy and clover. It makes the very best of pasture for both Summer and Winter. My land is rather rolling, and was inclined to wash when plowed for several years in succession. I thus became disgusted twenty years ago with having my good soil transported by every passing shower into the Galena river, and resolved to make it exclusively a stock farm, to raise horses, cattle, sheep and hogs. I set out with the determination to put my stock in such condition that when they were taken to the Chicago market, they would attract buyers. In order to fatten stock, it would be necessary to have the greater part of the farm in meadow and pasture, plowing only enough to furnish grain for the stock. By so doing, it would enable me

to change often from grain to grass, thus avoiding the washing away of the land. I determined to feed all the products of the farm to stock, and I have not failed to do so, excepting hay, a few tons of which, having been left over, have been hauled to market.

I have made fattening cattle a specialty for twenty years. I will give a little of my experience from experiments made.

FEEDING CATTLE.

I have fed cattle in the yard and cattle tied up. I have fed with corn in the ear, corn in the shock, broadcast over the yards, corn mixed with oats equal parts, and snapped corn with the husk on, also corn and cob crushed.

Corn in the ear, unless well soaked, is certainly very poor feed for fattening cattle; shocked corn is very good where you feed in the open yard. Corn ground with one-fourth oats is the very best of feed. On the last named I have made the best cattle I have handled. The cheapest feed that can be gotten up is corn snapped, fed with the husks on. It is quickly snapped, hauled and put in cribs near the feeding barns, where it can be readily carried to the stock, and is fed without waste. The cattle are slow about grinding it, the corn is held in the mouth by the husks until corn, cob and husk is thoroughly masticated, before being swallowed. I say cheap method, because it saves the labor of husking and grinding, and is readily fed to cattle in stalls or in the yard. Corn and cob crushed is last, but not least, in the catalogue of feed for stock of any kind. I would class it second best only for fattening qualities. The flinty particles in cob meal are thought by some to be injurious to the digestive organs. Much has been said by papers in that regard, causing many besides myself to give it up, fearing it would injure young growing stock. If these statements are facts, they have yet to be proven. Chemists seem to find but very little nutriment or fattening properties in it. But my experience leads me to believe that in their analysis they fail to discover something which has produced most favorable results in my use of the article. Cornmeal is unfit for food, unless

something, cut hay or straw, is mixed with it. The cob ground with the corn takes its place. I would much prefer it to the straw. I feed my cattle twice a day, and try to keep them plump and full. If my animals, from appearance, seem uncomfortably full, I am sure they are doing well. During the Winter I find that fifty pounds is about all the gain I can make on ordinary grade steers. My half blood Durhams will do better.

GAIN OF CATTLE ON GRASS.

In June, 1879, I bought two loads of common grade steers, weighing about nine hundred pounds, which I put on pasture, weighing them every month for six months, resulting as follows: July, gain per head, forty-nine and one-half; August, forty-nine and one-half; September, fed a little corn, gained only twenty-five pounds, the flies being very bad, driving them to the woods during the day, and when they came out it was to wait for their corn; October, fed on grass only, made ninety-three pounds; November, fed on grass, corn and hay, twenty pounds, the poorest average made. The grass had been frost-bitten so that they did not relish it, yet it kept them from eating hay. They would have done better closed up in the yard. The gain for each, per month, was fifty pounds. That experiment proved to my satisfaction, that corn fed to cattle while on good pasture is worse than thrown away.

COST OF RAISING A STEER.

I estimate the cost of a three year old steer as follows: First year, to keep him in good thriving condition, will cost fifteen dollars. The second year, I give him eight bushels of corn at thirty cents, two dollars and forty cents; hay, twenty-five hundred pounds at eight dollars per ton, ten dollars; pasture ten dollars, making twenty-two dollars and forty cents. The third year, I give him fifteen bushels of corn at thirty cents, four dollars and fifty cents; hay, three thousand pounds at eight dollars per ton, twelve dollars; pasture ten dollars, making the cost twenty-six dollars and fifty cents for third year. The cost for feeding the three years is sixty-three dollars

and ninety cents. At that age he should weigh sixteen hundred pounds, and should be worth five cents per pound, or eighty dollars. This leaves a balance of sixteen dollars and ten cents only, which looks small comparatively for feeding an animal for three years; but we must remember that the manure will pay for handling him, and that we have charged him the highest price paid in the market for all that has been consumed. We must also remember that the time of man and team, wear and tear of wagon, has been saved; in fact, the whole product of the farm, after having gone through the animal machine, has been rendered in a very short time into one of the most perfect fertilizers yet produced.

MANAGEMENT OF BREEDING COWS.

In order to obtain sixteen hundred pounds in a three year old steer, we have only to cross with the pure blood Durham bull, and feed him as an animal should be fed from his birth. Every thing depends upon the care given the first year. If the calf increases one pound a day by his extra feed, he may be expected to gain another pound by his ordinary growth, so that there is evidently a double gain. In order to raise good calves we must feed our cows. I think we damage our interests greatly when we suffer our milch cows to come out in the Spring in low condition. We are apt to think at the time perhaps, when they are dry it is enough to give them our coarsest fodder, when we should give them the kindest treatment, and most nourishing food, that their calves may come strong and healthy. I believe that the quality and quantity of milk given during the Summer, will be very much increased by extra care during the Winter.

MEADOWS.

Good meadows are very rare, from the fact that farmers, as a rule, plow from year to year, growing corn, wheat, oats, etc, so long as the soil is capable of producing these crops. When it is completely exhausted, they resolve to seed down to grass. Timothy is sown, and a miserable crop follows, not worth mowing. But I am happy to say that a new era is at

hand. Farmers are beginning to find out, of late, that red clover will grow on these worn out fields, and that by plowing it under, the soil can be renewed. To make a good meadow, I sow one peck of timothy seed per acre, on good strong ground, with Fall wheat, or on Spring grain. I make the field smooth with harrow and roller. After the grain is taken off, manure is hauled on. The latter part of August I commence hauling it, spreading it on liberally from the wagon. When the hauling is completed, I wait for rain to soften the manure. I then take the smoothing harrow and run over the ground until the rough has been made smooth. When this is thoroughly done, the coarse manure will never interfere with mower or horse-rake. My new meadows get all the manure made on the farm, which usually is very coarse, made from corn and fodder fed broadcast over the yards, together with tops of stacks, straw and stable manure. In order to realize a good crop for eight or ten years, without more manure, I have only to avoid pasturing, a practice that is ruinous to a meadow. The aftergrass, if left to cover the ground, protects the roots, keeps the snow from blowing off, and holds the moisture during the first part of the season, causing the young grass to make such rapid growth as to cover the ground so effectually that the dry weather in June can have but little effect upon it. I cut on an average about one hundred tons of hay yearly.

HAYING.

I commence the first of July, start in with two mowers, cut five or six acres, enough to make a rick of eight to ten tons. This I do every morning (weather permitting). In the afternoon I stack that which was cut the day previous, making a stack bottom of rails or poles, in the center of the field, over which I erect my derrick for hoisting hay with horse fork. Then, with sulky, rake into winrows, after which two horses are attached to the sweep, which will scoop up and haul to the stack with ease eight to ten tons in one afternoon. One good man on the stack, one to handle the horse fork, and three boys to handle the horses, make up the force necessary to accom-

plish the work. I have used the implement called the hay sweep for twenty years. It is made as follows:

HAY SWEEP.

Main scantling ten feet long, four by five inches; one above same length, three by four inches; these two should be three feet apart, connected by seven upright bars three feet long, one by two inches. The teeth are flat, five feet long, projecting two and one-half feet each way, and tapering to the ends, so as to easily run under the winrow. To each end of the rake should be attached a gate, swinging half way around, on very stout hinges. These gates consist of two pieces of scantling, three inches square and three feet long, united by two wooden bars, one by two inches, and a third at bottom, three inches square, tapering upwards like a sled-runner, these runners projecting a few inches beyond the gate. The whiffletrees are fastened a little above the middle of the gates, where the horses are attached.

Thus the horses pass along, one on each side of the winrow, drawing this rake, which scoops up the hay as they go. When full, they draw it to the barn or stack, and the horses turning about at each end, cause the gates to make a half-circle, draw the teeth away from the hay, and go for another load, the teeth on opposite sides being thus used alternately. I consider it a great labor-saving machine, which should be used by all who stack in the field. With two boys and two horses, more hay can be hauled to the stack in half a day than by two wagons with a good man to work them.

HOGS.

The Poland Chinas have been favorites, for several years, with the majority of farmers in these parts, and are decidedly a first-class breed. But of late the cholera has made such havoc with them, that we are beginning to think there has been too much in-breeding, so we are crossing with the Berkshire. Whether we are getting a more healthy hog by so doing, is a question. I believe that eight times out of ten the owner is to blame, permitting his hogs to become diseased from

negligence, or want of experience in their management, not knowing how to supply their wants. No other animal has so many wants, or craves such a variety of food. Hogs go for vegetable and animal food alike; they will live on grass or clover hay, and I am satisfied that a variety of feed is absolutely necessary for their health and well-being. Corn is the cheapest feed, and should be made the largest part of it. We are apt to think if they have it by them constantly, with plenty of water, and a little salt, we have done all that is necessary to make them fatten rapidly. But you give those hogs a bucket of ashes, and see how quickly they will get outside of it; then a bucket of dry bran, and see with what relish they will gobble it up. The next day give them a bucket of oats; the next a few potatoes; thus changing from day to day, and my word for it, you will see no slab-sided, drawn-up porkers, trying to hide themselves under a bunch of straw, waiting for the last call. With a variety of food, changed every day, with clean beds made up with plenty of straw, and not too many in a pen, you need have no fear of cholera, nor will you have any occasion to buy bogus medicine. I speak from experience. This year I have sold one hundred and fourteen hogs (fat), and have thirty-five more ready to sell, and twenty-three young sows that will weigh over two hundred pounds, which I have bred for my next year's supply.

I keep no old sows, breed altogether from young ones, commencing to breed them about the tenth of December, that they may come in the latter part of March and first of April. When the pigs are old enough to wean, I give them a clover pasture, in which they get plenty of exercise. They want dry, comfortable beds, but it is best to keep them out during the day, if the weather is fine. I feed corn and oats ground, equal parts, with a little bran, which is put in barrels and soaked for twelve hours. I feed twice a day only. The sows are fat when the pigs are weaned, and are turned out to pasture with other stock hogs. They get no corn until the crop ripens in the Fall, when they are pushed until ready for market. Thus handled they make cheap pork.

A. J. STREETER,

NEW WINDSOR, MERCER COUNTY.

Stock Farm of Twenty-Five Hundred Acres — My Three Rules — Valuable Herd of Short Horns — Best Stock the Cheapest — When to Sell.

CROW FARM

is situated two and one-half miles northwest of New Windsor, in Mercer county. Commenced my farm in the Fall of 1855 by the purchase of two hundred and forty acres of prairie, in the midst of a then open range. It was selected with a view to building up a stock farm. While the range was good, I bought cattle and herded them on the prairie, and usually sold in the Fall to feeders.

When it became evident that in a few years the range would run short, because the settlers wanted to buy and inclose the outside lands, then it was that the owner of Crow Farm used every effort, and all of his available means to buy, and add the surrounding land to the farm. This proved to be a good investment.

I often borrowed money, and never failed to meet my payments. I adopted

THREE RULES.

First. Not to go in debt beyond the value of my personal property, and to keep that property in cattle and hogs that were being prepared for the market.

Second. Sell only for cash.

Third. Avoid dealing with unlucky men. The last rule may seem simple, but its observance has saved me plenty of money and trouble. Men who make no money for themselves, and are often in trouble, will make only trouble for those with whom they deal.

Crow Farm, which derives its name from a crow roost

upon it, now comprises twenty-five hundred acres, and at one time it contained fifteen hundred acres more. It is used almost entirely for raising and feeding stock. About one-half of the farm is in pasture and meadow, and the other half is used mostly for raising corn. Renters, living in houses on the place, raise most of the corn, and deliver the rent, two-fifths, in cribs near the feed yards. Most of the renters' share of the corn is bought each year by the bushel.

BUILDINGS AND FEED YARDS.

The dwelling house, barns, and other buildings are located near the center of the farm, and where the land is broken. By this means plenty of water, shelter, and quick drainage from yards and feed lots are obtained. The yards and feed lots are on all sides of the barns, and the feed lots open into five pastures that extend in all directions.

FEEDING.

The corn is fed in boxes, and what falls upon the ground, or is dropped by the cattle, is saved by the hogs. The hay is fed in racks, with boxes below to catch the litter. There are always from three hundred to six hundred cattle on the farm feeding, and about as many hogs. In the Winter of 1879–80 I fed five hundred cattle, and among them are a herd of ninety Short-Horns, that for purity of breeding and individual excellence are not surpassed in the Northwest.

The young males are sold off every year at from one to two hundred dollars each. It is bad financial management to sell well-bred cows and heifers at from one to two hundred a head, when every calf they raise will sell for that amount.

THOROUGH-BRED SHORT-HORNS.

My herd contains some of the members of the most highly-prized families to be found in America, and among them are eight Rose of Sharons through *Thames*, which are strictly of the A. Renick breeding. One of these, *Rose of Sharon of Durham Lawn*, cost the proprietor of Crow Farm the large sum of $4,200. There are several of this highly-prized family, and

among them the famous imported Waterloo J., illustrated in the fourteenth volume American Herd Book. It was said of her when young that she was the grandest cow in America. The Roan Duchess, Duchess of Goodness, Harriet, and Young Mary families are also well represented. About fifty high-graded cows and heifers are kept on the farm to raise calves. A car load of these calves, six to eight months old, sold in the Fall of 1879 for twenty-eight dollars a head, to go to Utah Territory.

GOOD STOCK PAY EVERY TIME.

By having good stock, and giving them good care, the cattle fed each year through the hard times have sold for over five cents per pound. This stock made me some money, but bad stock would have proved a loss.

There is a high-grade steer on the farm now, twenty-one months old, that weighs over sixteen hundred pounds. He has made more money than six scrubs would probably have made in the same time; blood will tell. The same difference holds good in other kinds of stock.

The man who sows and plants poor seed, and breeds from poor stock, will remain a poor man. As the best seed to plant or sow is the cheapest, so is the best stock to breed from the cheapest.

From year to year the best cattle to be found in the surrounding country, and of any age, are bought for my farm; such have always made me money, while bad and scrubby animals have proved to be too dear, no matter what the price.

COWS AND CALVES.

The cows and heifers come in at all seasons of the year; and the graded cows mostly raise two calves at a time, and sometimes two pairs in a year. I also buy other calves from time to time. Before the calves are old enough to wean, they are separated from the cows in the daytime and fed grain, and turned to the cows again at night. By this means they become well used to eating grain before weaning time comes. They are weaned at from four to six months old, and their grain

feed (about half what they can eat,) continued with pasture or hay until grass comes in the Spring, when they go to pasture for the Summer.

PASTURES AND FENCES.

The pastures are not overstocked, and the feed, being mostly blue grass, is kept in abundant supply. Good fences are a specialty on Crow Farm, and are made five boards high, with cedar posts set five feet apart, or of hedge.

SIX RULES FOR MARKETING.

The future market price of farm products is beyond human calculation, and the market often disappoints the greatest numbers. Still, the writer has met with considerable success by observing the following rules:

When stock is fully ripe and ready for the market, and the market fair, it is better to sell than to hold for a rise.

When the market is high, and the stock is not ready, sell for future delivery to a responsible buyer; three times out of four it will beat the buyer.

When the market is low, make no contracts, and be slow to sell, because a rise in price often comes when least expected; in fact, high prices most always come unexpectedly.

When people in general say cattle, or hogs, or corn, or wheat, will be high next Winter or next year, they are almost sure to be disappointed, because they go to work with one accord to make it cheaper by increasing the production.

When the price of any farm product has run high for some time, and the farmers begin to drop other things and go for the product that has the money in it now, then is the time for the successful farmer to let that product alone.

When a leading article, say hogs, runs low for a long time, and farmers begin to stop raising them because it won't pay, then is the time to raise pigs.

The writer remembers one year when corn was scarce and high, and hogs were low, and the farmers wanted to sell their shoats at any price they could get. He bought up a lot of them for about one dollar a head; fed them a little corn, and Sum-

mered them mostly on pasture, and in nine months from the time they were bought, sold them for twenty dollars a head — *nineteen hundred per cent. in nine months.*

The writer, now fifty-seven years of age, makes no pretensions of being a *model farmer*, though some have said that he is one of the successful farmers of Illinois. Be that as it may, he began at the beginning, and whatever of success may have attended his efforts, is due more to a steady and determined effort to win, than to any other one cause.

Reared amid the pine-clad mountains of western New York, where they often stone up the lower side of potato hills to get dirt enough for the potatoes, and bring the Winter's wood down the mountain side on a hand-sled, (and no school house within miles), he knows what poverty is, and has a fellow feeling for all who live by labor.

A. P. CHARLES,

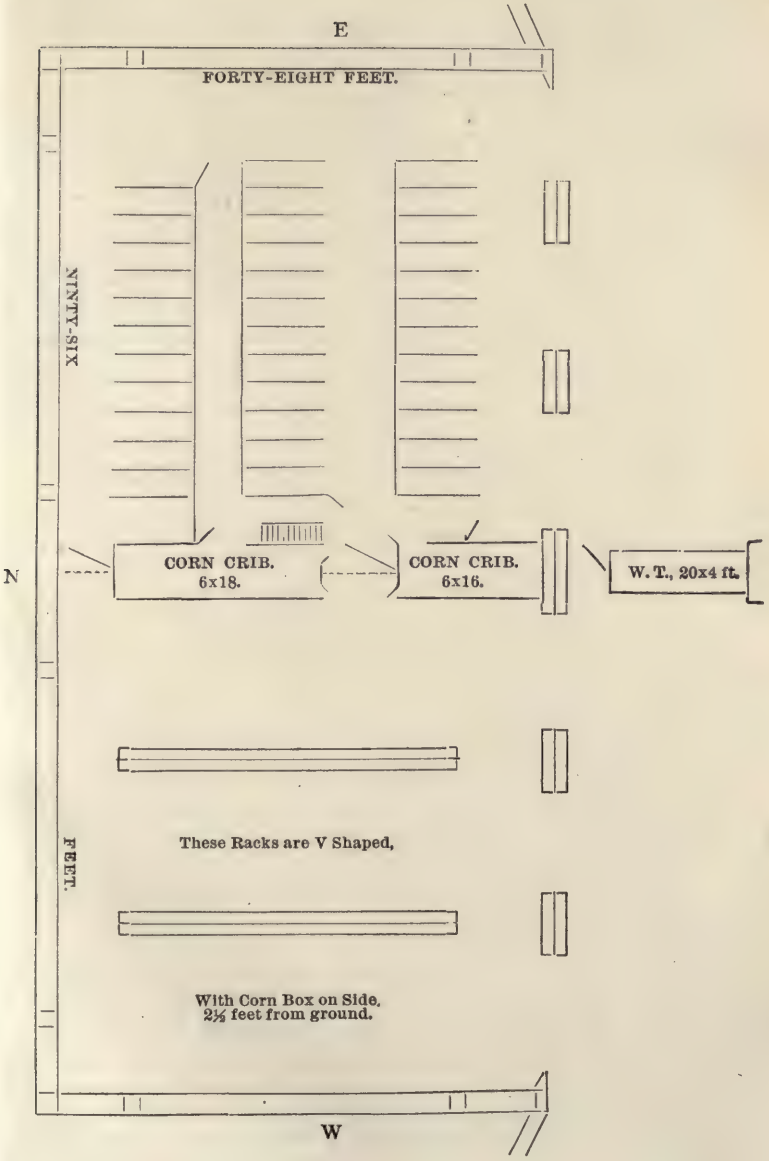
KNOXVILLE, KNOX COUNTY.

A Convenient Barn.

My barn, which I think is a very good one, is made as follows: Outside posts sixteen feet; forty-eight feet from ground to comb of roof. Forty-eight feet by ninety-six in size, on stone piers three feet at base sloping to the top on both sides to eighteen inches, with basement eight feet in front and seven and one-half feet in the rear. The front center pier is eight feet in width, the others, four in number, are six feet wide. Doors in front are swung up and fastened to joists, which are easily dropped in bad weather. The east half of the barn is stalled for feeding cattle. The width of the stalls is two feet ten inches with feed trough and hay rack. The hay is throw into the rack from above. The corn crib is below so arranged with derrick as to save a great deal of labor in unloading. I have stalls for thirty head of cattle. Each stall has a

door which is hung and fastened to two by four oak posts with hook and staple, into which I turn my cattle loose. By the use of a rope and pulleys the doors are raised up to joists and made fast and can be laid down in the same way; they have a spring lock which fastens itself. My yards and buildings are paved with stone six inches in thickness, with a ten inch stone floor under the cattle giving a fall of four inches.

The west side of the basement is used for stock cattle, has two large hay racks thirty-two feet in length running across the building. The hay is thrown into the racks from the floor above and the cattle here run loose. There are eight windows in the basement and four large doors in the rear of the building to drive in on the floor. There are six small rolling doors in front over basement or first floor, and one in the southeast corner of the end, with a window over each door. There are six shutters or blinds in each gable. The barn has a hip roof with six dormer windows in the roof; three on either side. It has a large cupola, built eight cornered, with a square base, and wind-mill on the top of the same, running a feed mill on the first floor, with a shaft out to the well, twenty-four feet from the barn. I collect all the rain-water and run it into the well.


E
FORTY-EIGHT FEET.
NINETY-SIX
FEET.
N
CORN CRIB.
6x18.
CORN CRIB.
6x16.
W. T., 20x4 ft.
These Racks are V Shaped,
With Corn Box on Side,
2½ feet from ground.
W

P. E. MICHAELS,

POPLAR RIDGE, JACKSON COUNTY.

Common Sense Applied to Farming — Wheat — Corn — Care of Horses and Cattle — Good Living.

WHEAT.

In raising wheat I break my ground twice; the first time as soon as possible after the wheat has been taken off, the second time just before I wish to sow my wheat, harrowing once or twice after each plowing. I think the best time at which to sow wheat in this part of the State is the last week of September or the first two weeks of October. By sowing earlier we are too apt to have the wheat injured by the Hessian fly, grasshopper, etc. I thresh out of the shock, but where the crops are small it does not pay to do this and let the rest of the neighbors stack.

CORN.

I find, by experimenting, that I can raise more corn, and of a better quality, by thinning it to two stalks in the hill. It is best in this part of the State to plant so as to plow the corn both ways.

I also find that I can raise more early potatoes, of a better quality and with less work, by planting and covering with straw; putting the straw about ten inches thick. Late potatoes do better, in this locality, when planted the last of June or the first of July. The peach blow is the best late potato I can find.

STOCK.

With reference to stock I aim to keep horses in a good condition, and free from colic, bots, etc. To do this I place salt and ashes in their feed-boxes every week, and feed and water them regularly. I am careful to have good water. A horse is very much like a person. You can starve him to drink any kind of water, but I treat my horse as I would wish to be

treated if I were a horse. A man is well rewarded for taking good care of a horse. There is no more need of having a sick horse than there is of being sick one's self. Unless we violate some of the laws of nature we will scarcely ever be sick. And unless a horse is forced by mistreatment or neglect to violate some law of nature he will seldom be sick.

The same rule holds good with cattle. With good shelter and half feed, cattle will come out of Winter quarters in better condition than with full feed and no shelter. It pays to boil the food for cattle. Regularity in the care of cows pays well. My experience and observation have taught me that when a cow is milked at four o'clock one day and six the next, or one person milks her one day and another the next, she will not give so much milk, nor will she yield milk as long as if one person milks and attends to the milking at regular periods.

I know pedigree has a great deal to do in cattle, and it is a pity that more of our farmers in this section will not come to that conclusion, and put it into practice, trying to improve their breeds. I never was in a section of country where the farmers, as a rule, took so little care of cattle as they do in this. It is no wonder that the cattle here are called "scrubs," for most of them are treated badly enough to make scrubs out of any thing.

In the matter of hogs I can not say that I think pedigree has so much to do in making a fine animal. I will except the old-fashioned long-nosed hazel-splitters. My experience is that if you have a good big corn crib and it is well filled, it is not much trouble to have nice hogs. My remedy for hog cholera is to turn the hog upon his back and give him about one-third or one-half tea cup full of coal oil. It is not an infallible cure perhaps, but I never saw it fail!

The most important step toward making a successful farmer, is to take care of what is made. It matters not how much a farmer may make if he does not save it.

CARE OF TOOLS.

Taking care of tools is another essential towards good

farming. How often do we see farm machinery standing out all the year, and we hear the owners of such property always crying "Hard times." A piece of farm machinery that will last five years if left out doors all the time, would invariably, if housed up, last twice as long.

LIVE WELL.

There is no reason why a farmer should not live well. If he will manage rightly he can raise nearly every thing he needs at little cost. I do not believe in the motto "Live on what you can not sell," in order to die rich. I think no one has a better right to the best that the ground will yield than the one who plants the seed. Nothing conduces to good health so much as a variety of good wholesome diet. And a farmer should keep his family as healthy as possible.

I have not adhered to my text very closely; but to sum the whole matter up, my method of farming is to cultivate the ground all I can before planting the crop, and to cultivate it all I can after planting. I take as good care of my horses, cattle and hogs as I know how to. I study the laws of nature so as to diet myself in order that I may not have to lose time by being sick, or lose money by having to pay a doctor's bill. I leave to others to say whether I am a successful farmer or not.

T. L. MILLER,

BEECHER, WILL COUNTY.

Hereford Cattle, Cotswold Sheep, and Berkshire Hogs.

HIGHLAND STOCK FARM.

My farm of about eight hundred acres, lies in Will county, and is a stock farm, used and carried on for the breeding of fine stock, to wit: Hereford cattle, Cotswold sheep, and Berkshire hogs. Each class is thorough-bred, and is kept for breeding purposes.

My horses have been bred on the farm from ordinary mares, and from Morgan stallions.

A portion of the grain that I feed is raised on the farm; the balance I buy of neighboring farmers. It has been my practice during times of low prices to purchase, but it is now my design, in anticipation of higher prices, to raise all the grain that is needed.

I cut from four hundred to six hundred tons of hay annually. My buildings consist of eight dwellings. Six are used by the persons employed on the farm, and two are used by myself. They are all moderate sized. The barns and stables will cover and accommodate three hundred head of cattle, two hundred sheep, and one hundred hogs.

The main building, or barn, is one hundred by one hundred and thirty-two feet, with an ell twenty-four by eighty-six feet, twenty feet studding, and I have two others, each twenty-four feet square, and a shed sixteen by one hundred and sixty feet.

The lower part of this building is used for stabling cattle, and will accommodate over two hundred. The main floor will hold five hundred tons of hay. The center of this floor is used as a granary, and holds from six thousand to eight thousand bushels.

The upper floor of this central part, which is thirty-two feet square, is kept as a mill room. I use two Challenge mills. Running from the ground up through this central room, is the tower, on which rests a double-headed windmill, thirty feet in diameter, and of eighteen horse power. With a fair average wind, this mill furnishes the power for pumping the water, pulping roots, cutting hay, shelling corn, and grinding the feed.

The water is distributed through the stables and yards by means of iron pipes, and the entire stock can be watered without moving them. The cost of the barn, which I built in 1873, was $10,000. The other buildings were built at a cost of about $8,000.

I have on my farm over twenty miles of fence. Two or three miles of this is barbed wire, the balance is of posts and boards.

There has been but little drainage done, but it is intended to commence this improvement as soon as possible.

HEREFORDS.

The Hereford cattle, for which the farm is particularly noted, were first put on the farm in February, 1872. They are pre-eminently the beef cattle of the world. They have hardy constitutions, mature early, and produce the finest quality of meat of any of the beef breeds, at the earliest ages. These results are obtained at less cost than they can be on any other breed.

Eight years ago they were scarcely known at the West, but are yearly commanding more attention than any others.

The cows are fair milkers when used for the dairy, and always prove good butter makers. My young stock is always, with reasonably good care, fit for the butchers.

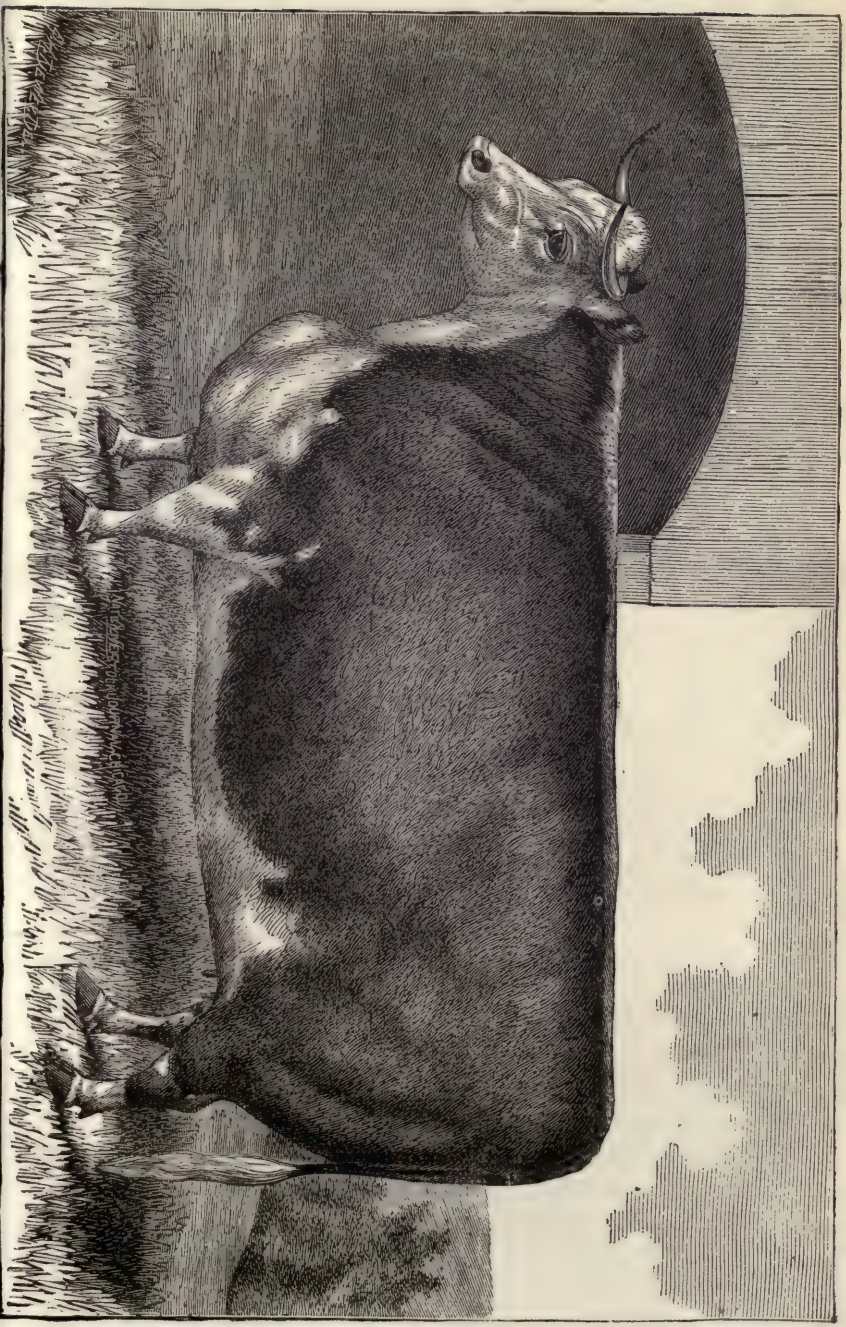
COTSWOLD SHEEP.

These sheep have their origin, as did the Hereford cattle, in England, and are classed among the leading breeds of mutton sheep in that kingdom. In their native country they are kept on the pastures and root fields, during the entire year. This is nearly absolutely true of the store sheep. They mature at early ages, on generous feed, and attain a weight of two hundred pounds when eighteen or twenty months old. At this weight they will rank as first-class mutton. It may also be claimed for them that they will attain these weights and quality at less cost than most other breeds.

BERKSHIRE HOGS.

The Berkshire hog has been bred on my farm for many years in its purity. These hogs are noted for early maturity and fine quality of flesh, and will command the top price on the market.

These meat-producing breeds were selected after careful investigation as to the merits they possessed as compared with other breeds used and bred for that purpose. The result has proven the correctness of the opinion formed in their favor.



There are many good breeders of these classes, but it has been the aim at the Highland Stock Farm to bring the stock to as high a state of perfection as possible. That I have succeeded is witnessed by the reputation that my stock has attained on the different show grounds.

I make it my aim to bring forward from the different branches the best meat product.

From the Herefords, the fat steer, from the Cotswold, the fat wether, and from the Berkshire the fat pig.

It is not the aim at the Highland Stock Farm to bring out a monstrous-sized, but the *best* steer, the *best* wether, the *best* pig, at the *earliest* ages, and by such methods as will make it profitable.

Early maturity, fine quality, with economy of production, these are the aims.

NELSON JONES,

TOWANDA, MC LEAN COUNTY.

Cattle, Sheep and Hogs — Manner of Seeding for Pasture and Meadows — A Stock Farm.

HOME PARK FARM

is situated in McLean county, three miles southeast of the village of Towanda, at Smith's Grove. It lies on a small stream of living water, and contains nine hundred and eight acres. One hundred acres are in timber land, and are well set in blue grass. During the Summer this is used for pasture, and for feeding grounds during the cold Winter weather. The farm is divided into several tracts, some containing one hundred and sixty acres, and others but small lots. Generally each field has forty acres, which makes it convenient for handling several kinds of stock, and also for grain raising. I devote about two hundred acres to raising corn, oats and rye. I raise from forty to sixty acres of oats and rye annually, for the purpose of seed-

ing them to grass and restoring the land. About five hundred and fifty acres are kept for grazing cattle and sheep, principally the former, of which I graze about two hundred head of different ages, and about two hundred sheep.

I raise, each year, a hundred hogs, and they use the litter from the feeding cattle. This is all the stock I keep on the farm. For all the various uses of a horse on the farm, I prefer one weighing twelve hundred pounds, with as much thorough blood as possible, so as to ensure soundness, hardiness and speed.

I keep at Home Park Place a herd of pure bred

SHORT-HORNS.

I have at present thirty-five head of the following families: Miss Wileys, Doves, Maid of Thornhill, Beauties, Young Phyllis and Van Meter, Red Roses or imported Young Marys, together with the young bull King of the Roses, 34,254, at the head of the herd. He is pure bred Kirklevington. I keep my cows in good breeding condition, saving the heifers for breeding, and selling them as customers need. I sell the young bulls to farmers for breeding purposes, making steers of all that have bad colors and such as I think are unfit for breeding purposes. Occasionally I join in a public sale so as to curtail my numbers. The cows are grazed during the grass season on the pastures, and as Winter sets in I stable them nights and feed hay. To those giving milk I feed a small allowance of grain. I make use of the milk and butter in my family and sell the surplus.

MODE OF HANDLING STEERS.

I raise fifteen or twenty annually, and buy good grade steers of my neighbors, keeping them until they are two and a half or three years old. I feed the calves and yearlings in Winter part hay, that is grown on the farm, allowing them to run on the pastures until about the first of March, when they are confined in a smaller lot and fed hay and husked corn till they are turned into the pastures again, which is done about the first of May. They run on the pastures and have a full feed of corn in boxes once a day, if I intend to turn them off

in the early part of the Summer. But if I conclude to give them Fall feeding I let them run on the grass until the first of October. I then commence Fall feeding on grass, allowing them to graze on a full feed of corn till frost cuts the grass. In November I place them in small lots and feed them until they are shipped to market. It takes on an average twenty-eight pounds of corn together with the fodder, and plenty of salt and water, to make two pounds of gain per day, or sixty pounds per month.

I keep the Merino sheep. They are hardy and consume less food than the large, coarse, woolly breeds, and are better adapted for large herds.

I like the Poland China hog, as it can be fattened early. It is an excellent hog to follow cattle.

High bred meat-producing animals make much larger returns for the food consumed than poor blooded ones. They readily convert all the grass, hay and corn grown on the farm into beef, pork, mutton and wool.

My plan for seeding meadows and pastures is to sow eight quarts of well cleansed timothy seed and four quarts red clover seed per acre. I sow the timothy in February on a snow, on growing rye, and the clover the first of April; or if sown after oats that were sown in April, sow immediately after harrowing the last time. Do not even let the dew fall on the land before sowing, as the dew or rain closes the pores of the earth and forms a crust that prevents the seed from sinking into the soft earth and it is thus scorched to death with the heat of the sun.

I mow for three or four years, permitting the cattle to graze from the blue grass pastures after the grass is mown. In a few years the meadows are thus transformed into a sod of blue grass, without sowing a seed. Nearly all the pastures on my farm have been made in this way, and have been used for twenty-five years. They grow better as they grow older, and are less liable to be over-grown with ragweed. I consider blue grass the best for a permanent pasture. A portion of my farm is thoroughly underdrained, an investment which has brought me the fullest returns.

My dwelling house has a stone foundation (basement) and the front is of pressed brick, and finished with the modern improvements, at a cost of about $12,000. My cattle barn is one hundred feet long and fifty-eight feet wide. It also has a stone foundation with brick floors, and is finished in the most convenient manner, at a cost of $4,500. These, with the stables for horses, scale house and other out-buildings, comprise the buildings of my farm.

GEORGE A. TRUE,

WALTHAM, LA SALLE COUNTY.

Corn and Manner of Culture — Never Lost a Crop in Twenty Years — How to Select Hogs — Their Feed and Care.

CRYSTAL SPRING FARM

is situated in the town of Waltham, La Salle Co., four miles from Utica, seven and a half from LaSalle, and twelve miles from Ottawa. All of these towns are on the Illinois and Michigan Canal and the Chicago, Rock Island and Pacific Railroad, and are surrounded by the finest farming sections of country to be found anywhere.

During the twenty-one years that I have lived here, we have never lost a crop. Of course the yield has varied, but has never been anything like what could be called a failure. My smallest crop of corn averaged twenty-five bushels per acre. The best crop was in 1860, when the warehouse receipts showed an average of sixty-five bushels of sixty pounds, or what would be, at fifty-six pounds per bushel, about sixty-nine and a half bushels per acre. For all my crop accounts the ground was measured and the crop weighed; I do not believe in guess work.

The principal reason I have had no failures is, that my

land is nearly all well drained naturally, and has a subsoil that allows the water to pass through.

WATER.

On this farm there is no spot where the water stands, even in the wettest seasons. I have at all times an abundance of pure spring water, having quite a number of springs in the pasture corner of the farm which give the name to the place. The family of whom I purchased in 1858 christened it. As I have plenty of pure water and shelter for stock, it is natural that Crystal Spring Farm should be run as a stock farm, or at least for grain and stock mixed, which was my plan for the first twelve or fourteen years. Then I tried it as a stock place exclusively, buying my grain, but, becoming satisfied that it is best to raise what is fed, and to feed what is raised, I have gone back to the former plan.

BUILDINGS.

The buildings are in about the center of the farm, so as to be where the permanent water and natural shelter are, and where there is sufficient descent to enable me to build a cellar barn to advantage, and to have the corn crib built on the level of the yard, and still be high enough above the feeding platform below, to enable me to spout the shell corn, or slide the ear corn into wagons, making a great saving in labor. There also, in the cold, windy days of Winter, the stock are entirely sheltered from the north and west winds, both while in the yards, and when going to and from the drinking places.

CORN.

Being within easy reach of canal market, of course corn is the principal crop raised. When I seeded down my place I ceased to keep crop accounts, but, for the twelve years from 1860 to 1871 inclusive, my accounts show that it cost me an average of twenty-seven and two-thirds cents per bushel to raise and market my corn, and that my average yield was forty-four bushels. Since breaking up my fields again, the yield has been about sixty bushels per acre.

My way of preparing the ground, and putting in a crop of corn is, in the first place to break my last year's stalks when the ground is frozen, after the cattle have taken all they will of them. Then, when the ground has come to a proper condition for plowing in the Spring, I harrow, turning the stalks across the way I intend to plow, if I am using a riding plow, which cuts them with its rolling cutter. If using a walking plow, then I harrow just as I intend to plow. After plowing, I cross harrow, and then run the harrow the same way it was plowed, which is the way I plant, and I want the corn stalks that are on the surface, turned the way I run the planter. Then, if the ground is not as smooth as I wish, I put on the roller. As a sign for the right time to plant, I regard the oak buds as the most reliable, as when the ground is warm enough to start them, it must be warm enough to bring up the corn. I drill all my corn; have done so for ten or twelve years. My seed corn I select early in September, before all the corn is out of the milk, thus getting the earliest ripening. I hang this up on the same day it is picked in a dry place, where the air can circulate through it. I then feel sure it will grow, if it is not planted before the ground is ready for it. Two and a half or three inches is about the right depth to plant.

I CULTIVATE

my corn as follows: After planting I take my corn plows and cultivate the ground, using the planter mark as a guide to keep from moving the corn. This is a great gain over the old and common way of leaving the ground till the first tending of corn without any other stirring than the harrow can give it. By this method I stir the ground up deeper than I can at any time after, and clear the way for the first tending, which is the most difficult, as well as the most important of all the tendings. I throw the clods and stubs (which make it so difficult to plow close to the corn, and not cover it) to the surface, where they can be broken up by the harrowing that I now give the ground. I keep the big harrows going

till the corn is fairly up, and even longer, if the ground is in good condition, which it ought to be by this time. This will keep the weeds from getting a start, and as soon as the corn is high enough, I start the corn plows, going slow, very slow, so as to get up close to the corn, and each subsequent time going further off, turning the shovels to send the dirt up to the corn. If the top of the ground is dry, a rolling before tending is quite a help, but care must be taken not to roll when the corn is wet, or the ground sticky.

SMALL GRAIN.

I only raise oats enough to seed down my ground. During the years above mentioned (1860 to 1871) the oats I did raise cost me thirty-one and one-half cents per bushel.

Wheat I have entirely given up raising. Ten years ago I said that from that time on I would eat (in the bread line) the sweat of some other man's brow, and have not as yet seen any cause why I should change my mind. All the wheat I ever raised cost me $1.08 per bushel.

The great natural advantage of the place for stock raising and handling, caused me, as soon as I had got enough ahead to be able to wait the slower returns that are incident to stock over grain, to seed down more of my ground, so as to be able to keep more stock.

HOGS.

My first start with hogs was with the Chester Whites, which were at that time quite the rage, and there were some very fine specimens of that breed shown at fairs; but, though I was as careful in selecting as I knew how to be, and certainly paid high enough prices for them, yet the results were discouraging, and my hog account for the first two years proved that I had better have sold my corn as before. I then turned to the Berkshires, and since then the balance has been on the right side. For quite a number of years I have had nothing but thorough-bred Berkshires on the place. There is no question but that from twenty to fifty per cent. more can be obtained for corn by feeding it to hogs, if one only has the right

kind of hogs, and a suitable place for keeping them where they can be kept healthy. The right kind of hogs is easily obtained, and there are plenty of farms where they can be handled to advantage, but how to keep them healthy is the great problem. In endeavoring to solve this problem, I begin when my pigs are but a few days old, in March and April, and by a judicious use of a small club, I allow none but healthy, vigorous ones to grow up. Then, when selecting my breeding sows, I make a bright, healthy, vigorous look the first point, and then take such of them as have other points to suit me.

SELECTION OF SIRE.

The boar, too, must be chosen with care, for, as he comes generally from a stock with which you are not acquainted, you have only the individual specimen to judge by. I would much rather go to a man's farm and purchase my pig, than to buy him at a fair, as then I could see his whole stock; but generally we have to select from pigs fitted up for show. Several times I have found that the pig I had bought was only a sham, and when he was put into proper stock order he was not such a pig as I would use, and I have had to buy again.

PENS.

I have always taken care that my pigs should have dry, well-ventilated places to sleep in, keeping them clean, by often sweeping them out, and disinfecting with copperas or carbolic acid. I also keep salt and ashes, and copperas and sulphur, all the time, where all my pigs can help themselves to it, and take or leave it, as they choose. They generally consume a good deal, so that I buy by the barrel. I market most of my pigs at eleven or twelve months old, making them average about three hundred pounds; this being the way to get the most money for the corn fed, according to my experience. My accounts show that my pigs consume twenty-four and one-third bushels of corn per head, and make twelve and one-third pounds live weight per bushel of corn fed. I feed corn on the cob, dry, the pigs going to the spring run, close by, for their

drink. This is their only feed, except that they have the run of the pasture in the Summer.

I ought, perhaps, to add that, notwithstanding all my care and sanitary precautions, I have had a touch of the so-called hog cholera, losing six or eight.

R. S. HOOPER,

BRISTOL, KENDALL COUNTY.

A Dairy Farm — Makes Gilt Edge Butter From Graded Short Horns — Clover The Farmers' Friend.

WOOD LAWN FARM

is situated fifty miles southwest from Chicago, and eight miles in the same direction from Aurora. It contains two hundred and sixty acres, and lies in Kendall county, half a mile from Bristol.

It lies in a portion of the Fox river valley, known in the early history of the country as "the garden of the West," which richly merited the title. When the eye of the pioneer settler fell upon the valley, it was one unbroken surface of prairie, interspersed with wild flowers, and outlined by the timber of the Fox river on one side and Blackberry creek on the other. The scene must have been truly magnificent. The improvements that have since been made have not detracted in the least from its beauty, but have rather enhanced it.

This delightful portion of the valley of the Fox, is about six miles in length, and from one to three in breadth, and about in the center of the tract lies Wood Lawn.

ADVANTAGES AND BUILDINGS.

The farm possesses every natural advantage, being well watered, the Fox and Blackberry forming two of its boundary lines, while crystal springs, that never freeze or go dry, run through portions devoted to pasture. The farm is level and perfectly dry, the soil being composed of a rich loam underlaid with gravel and sand. Water is obtained any where by

digging from fourteen to seventeen feet. The former owner of the farm had rented it for years, consequently when it came into the possession of the present proprietor it contained a few of the old buildings erected in the early settlement of the county. These were removed before erecting such as seemed necessary for my convenience. I commenced improvements five years ago, and the place now presents quite the appearance of a village. The house building is a cottage containing just room enough for use, with none to spare for damps and shadows. The two rooms in front are connected with an arch, and are occupied by the family as sitting-room, library, parlor, etc. Next is a pleasant little hall, and across it a bedroom. Extending back from these, are the dining-room, kitchen, pantry, and cistern room. The latter is a small room, opening from the kitchen, and contains a sink, etc. Still further back is the laundry, and next to that the creamery, where the milk of twenty-five graded and thorough-bred Short Horn cows is manufactured into fancy butter, for which the highest market price is received. The basement has a furnace-room, a cellar for vegetables, and a storeroom. Both the house and barn are lighted with gas manufactured on the premises.

The barn is situated conveniently near, and contains three stories. The upper one is devoted to hay, which is put in with a patent fork. The middle story contains horse stables, carriage room, and bedroom in which a man usually sleeps. The basement is for the accommodation of the dairy cows, and the calves, which are raised by feeding skim milk with flaxmeal and grain. By this means I have been able to turn off each year a carload of fine two year old grade steers, besides keeping the dairy supplied with heifers. A fine thoroughbred Short Horn bull is kept for the purpose of improving the grade and raising thorough-breds. A few horses are bred on the farm, mostly of the class intended for carriage horses, and show good results.

The number of horses and cattle kept are about one hundred. Most of them are young stock, as they are considered more profitable than to feed older ones.

A short distance from the barn described is another, built upon a stone basement, and capable of holding one hundred tons of hay. Under it are box stalls for the accommodation of young stock, and for breeding purposes.

A hen house, corn crib, tool house, and work shop are among the many conveniences, and last, but not least, are two small houses, occupied by hired men, thus relieving the good wife of the burden of boarding much help. These buildings all stand on good foundations, the stone of which was taken from the quarry on the farm.

The Poland China hog receives the preference on this farm. I have tried several breeds and have decided in favor of the one named. I raise and market one to two carloads each year.

It is my design to raise just grain enough to feed on the place, mainly corn and oats. About two-thirds of the land is devoted to grass. My practice has been to spread the manure on the meadow land, and then plow it under with the Fall growth of clover, to be planted with corn in the Spring. After raising two crops it is sown to oats, and again seeded to clover.

DAIRY.

The main feature of this farm, however, is the dairy, which is conducted on the most approved modern plan. The milking is done in the barn, commencing at five o'clock in the morning, a duty to which all are called by a large bell which hangs in the belfry, and which is rung by the man in charge. The milk is strained in deep pails, and taken to the creamery, where it is placed in water in cement tanks made for the purpose. Ice is kept in the room above the tanks, which receive the waste, thus keeping the water and room cool. The churning is done in a room adjoining, by the aid of a revolving churn, with horse power. This management results in a very fine article of butter, and is very remunerative.

The cows are fed in Winter on clover hay and ground corn and oats mixed with bran, equal parts. In Summer the same feed is given, unless the cows are in pasture, when the hay is omitted. I consider clover the farmers' friend, and will have nothing else.

MILO BARNARD,

KANKAKEE, KANKAKEE COUNTY.

Fruit and Timber Growing—First Mistake of Planting Eastern Varieties—Twenty Feet Too Close to Plant Apple Trees—Cherry Trees Much Better Without Cultivation—Vineyard of Concord Grapes—Strawberry Culture—Actual Measurement of Timber on my Grounds—Planting and Cultivation.

The majority of farmers who settled the Grand Prairie region, Illinois, did so under the impression that fruit could not be raised profitably, even for home consumption, and that life was too short to grow forest trees expecting to reap any benefit therefrom in one generation; hence these very important branches of the farmers' calling have, in most cases, been sadly neglected.

When I settled here in 1857, I entertained the prevailing opinion in regard to the above named subjects, but soon came to take a different view, discovering that windbreaks and shelter belts were badly needed for the comfort of the family, as well as of the domestic animals, and that gardens as well as field crops, were greatly benefited by a judicious planting of screens and groves of timber.

As to fruit, it soon became apparent that the farmer who did not raise a supply usually went without, and the great importance, I might say the absolute necessity, of an abundant supply of cooling, luscious, life-giving fruits in their season, as a promoter of health and happiness, induced me to take the matter in hand in an earnest matter.

As timber growing (to a certain extent at least) seems necessary to successful fruit growing, I shall treat the two subjects together.

My soil is the common black prairie mold or pasty soil that is found away from the sand-ridges, streams and timber, quite

level, but rolling enough to carry off most of the surface water. But as the subsoil is mostly clay, of a yellowish color, it holds water pretty well, so that during an open Winter or wet Summer, we are not entire strangers to muddy roads and water-soaked fields.

APPLES.

I first planted four hundred apple trees on the highest land I could find near my house, planting them twenty feet apart each way; then for a few years I plowed the land up to the trees, leaving dead furrows in the center between the rows to carry off the water.

At the time of planting the orchard, I also planted a row of red cedar on the west and north, and white pine on the east, twenty feet from the apple trees, and back of this, belts of deciduous trees from four to eight rods wide. I kept the ground clean and mellow by cultivation, and the trees all made rapid growth. Some of the apple trees came into bearing in four to five years. Right here I should mention mistake number one. It was the old story of Eastern varieties, such as Newtown Pippin, Fall Pippin, Rhode Island Greening, etc., unsuited to our soil and locality. Some of these trees (though twenty years planted) have never borne enough to pay the first cost of the trees, while Early Trenton, Keswick Codlin, Lowell, Fall Winesap of the West, Domine, Rawls Janet, Jonathan, Ben Davis, Fulton, Golden Sweeting, Roman Stem, Golden Russet and many others have done well, though not planted until a subsequent period. This second planting is quite common here, after experience has opened our eyes and sharpened our wits.

There are other mistakes that should be mentioned in this connection. Twenty feet is too close to plant apple trees, thirty feet is nearer right, and some kinds should be even farther apart than this.

The shelter belt should be forty or fifty feet from the apple trees, and black walnut or butternut should not come nearer than one hundred or one hundred and fifty feet, as they are sure death to fruit trees when planted close.

Our surplus apples have been mostly absorbed by the home market. Some have been barreled and shipped to Chicago.

My first planting of pear trees did well and bore several good crops, then the blight attacked them and they were soon dead. Subsequent plantings have done but little good, and pear growing at present, at least, seems under a cloud. Peaches are not planted with the expectation of their proving remunerative, although I grow fine peaches some seasons.

CHERRIES.

Cherries, as a rule, do well. I refer to the Early Richmond and others of the Morello class. But there are some failures, and my experience may benefit some one, as my ignorance cost me a good sized cherry orchard. I cultivated my trees even after they began to bear, kept them growing too late, and a cold Winter killed them. Since then I have investigated the matter quite thoroughly, and am convinced that cherries do much better without cultivation, at all events, after the trees come into bearing.

The Duke cherries thrive in some parts of our county, but the sweet varieties are not a success. Cherries are about equally divided between Chicago and the home market. I have shipped both in quart boxes and in boxes holding half a bushel.

GRAPES.

I have had fair success in grape growing, but during the last few years, the rot has shortened the crop considerably. I plant the Concord mainly, having found it far ahead of any thing else tried, for the main crop. Hartford, Ives, Clinton, Catawba, Isabella, Delaware, Martha and others, including many of the Hybrids, have been grown with more or less success. There are portions of our county where the Hybrids and finer varieties do well on the sand hills and ridges.

I have a vineyard of one acre of Concord vines, planted some twelve years ago. They were planted six feet apart each way, and trained to a single stake, generally with two canes from the ground or near it, twisted each way around the

stake, and tied with strong twine at the top, and pruned on the Spur system. These have borne as high as five tons in a season, but as before mentioned, have not done as well for a few years past, on account of the rot. I have never made any wine. Some few of these grapes have been made into wine after passing out of my hands, but the most of them have been used for the table. A light crop has generally been consumed by the home market, while in good bearing years Chicago has taken a part. I have handled them in crates, half bushel boxes and three pound boxes, but prefer the half bushel box. One change I would make if planting again, I would plant farther apart, say eight feet each way.

SMALL FRUIT.

But the fruit most neglected, the easiest raised, and the most profitable for family use is the small or berry fruit. The strawberry, the king of the berry family, is about the only fruit that grows naturally on our prairie soil. Strawberries should have good culture the first year, then if they are properly mulched, we can take two crops without disturbing the soil, after which, however, the old bed should be plowed up and a new one planted.

Raspberries, blackberries, currants and gooseberries require good cultivation or heavy mulch; they then produce bountiful crops, excepting the blackberry, which has suffered from Winter killing, but with the Snyder and other reputed hardy kinds, we may anticipate more uniform success.

TIMBER.

Knowing the value of timber to the prairie farmer, and having succeeded beyond my most sanguine expectations in growing the same, a few notes touching the growth of different varieties may benefit some beginner.

The following are actual measurements taken from timber cut on my grounds:

Lombardy poplar, fourteen years old, fifty-four feet high, twenty-two and one-half inches in diameter at the base, one year's top growth or increase in hight, four feet five inches;

a rapid grower, forming straight poles, but a short-lived tree. Cottonwood, seventeen years old, fifty feet in hight, eighteen inches in diameter, top growth four feet; a rapid grower, good for windbreaks and firewood. Golden willow, thirteen years old, forty feet six inches in hight, sixteen and one-half inches in diameter, one season's top-growth, three feet four inches; good for windbreaks, fuel, and ornamentation. White willow, thirteen years old, forty-six feet in hight, eleven and one-half inches in diameter, one season's top growth, two feet and seven inches; more upright, and attaining greater size, than the Golden and a good grove tree. This specimen was double, the tree being forked at the ground, and my measurement was of one half only, hence the small diameter. Silver poplar, fifteen years old, forty-two feet in hight, twenty-two inches in diameter, one season's top growth three feet seven inches; a good grove tree of rapid, healthy growth, but can not be recommended for door-yards, on account of its sprouting propensities. Soft maple, thirteen years old, thirty-one feet in hight, nine inches in diameter, one season's top growth, three feet four inches; a valuable, well-known tree. Balm of Gilead, seventeen years old, thirty-one feet in hight, ten inches in diameter, top growth only a few inches; tree unhealthy, and utterly worthless with me. Aspen, thirteen years old, thirty-one feet in hight, seven inches in diameter, top growth, four feet six inches; like the Balm of Gilead, unhealthy and worthless as a timber tree. Ash-leaved maple, nine years old, twenty-eight feet in hight, six and one-half inches in diameter, one year's top growth, four feet six inches; healthy, a good grower, valuable for street, door-yard or grove, also for sugar-making purposes. Sycamore, thirteen years old, thirty-four feet in hight, eleven inches in diameter, one season's top growth, four feet; good grower, and excellent shade tree on account of its large leaves. Butternut, thirteen years old, thirty-one feet in hight, seven and one-half inches in diameter, one season's top growth, four feet seven inches; a rapid growing, healthy tree, valuable for its timber and nuts. Black walnut, seventeen years old, forty-one feet eight inches in hight, seven and one-

half inches in diameter, one season's top growth, five feet seven inches; a healthy, long-lived tree for grove or road-side, and hard to excel for its valuable timber and nuts, but can not be recommended for door-yards, especially near the house, on account of its meagre shade, and its liability to the attacks of the caterpillars. White ash, fifteen years old, twenty-seven feet six inches in hight, ten inches in diameter, one season's top growth, two feet seven inches; a healthy, clean, beautiful tree, excellent for door-yards or lawns, a rapid grower, easy to transplant, and second only to the black-walnut in the value of its timber. Red oak, twelve years old, twenty-five feet seven inches in hight, six and one-half inches in diameter, one season's top growth, two feet two inches. Red cedar, eighteen years old, twenty feet five inches in hight, nine inches in diameter. Scotch pine, sixteen years old, twenty-eight feet in hight, twelve and one-half inches in diameter, one season's top growth, twenty-two inches. White pine, fourteen years old, thirty feet six inches in hight, eleven and one-half inches in diameter, one season's top growth, four feet two inches; the most valuable tree on our continent.

To make the list more complete of the more common kinds of timber trees, I add the measurements of a few varieties I had no occasion to cut.

Austrian pine, sixteen years old, twenty-five feet high, ten inches in diameter. Norway spruce, twenty years old, twenty-eight feet high, fourteen and one-half inches in diameter. Balsam fir, twenty years old, thirty-two feet six inches high, fourteen inches in diameter. American larch, eighteen years old, thirty-four feet high, ten inches in diameter. Hard maple, thirteen years planted from forest, thirty-four feet high, ten inches in diameter. Red elm, thirteen years planted, thirty-eight feet high, thirteen inches in diameter.

The diameter given, in all cases, is for the wood only, exclusive of bark.

PLANTING AND CULTIVATION.

Many farmers are deterred from planting forest trees, by a lack of practical knowledge on the subject. A few plain,

simple directions may, therefore, benefit some new beginner, who is desirous of surrounding himself with the comfort and home-like appearance that trees alone can give.

I find from experience that all nut-bearing trees are best planted where they are to remain; others, such as ash, maple, and elm, should grow one year in the seed-bed, and then be transplanted to the grove. Willows, cottonwood, and poplar, are best grown from cuttings; these may be transplanted successfully, but the growth is more satisfactory and expense less, if planted in their permanent places. Of course evergreens must be transplanted, as they are difficult to raise from seed.

The last fourteen acres of forest that I planted, was done in a more systematic manner than was my first or previous planting. I commenced in the Fall to procure seed of the nut-bearing trees, such as walnut, butternut, oak, and hickory. Without giving them time to dry, I covered them slightly with earth in shallow trenches on dry land, scattered thinly so the earth would come in contact with all or most of them. The freezing and thawing during the Winter opened the nuts in a natural manner, and by the time my ground was ready in the Spring, they were in nice condition for planting, some of them with sprouts on four inches long.

The seedlings, such as ash, maple, etc., also young evergreens, I had secured by sowing seed myself, the Spring before, or from nurserymen.

Then as soon as the ground was dry enough in the Spring, I had it plowed, dragged, and marked both ways with a corn-marker, the rows being near four feet apart. Then we were ready for planting. One took the nuts in a pail and dropped one at each cross, making a hole with the heel of the boot where the marker had not made a furrow of sufficient depth, and one followed, covering with a hoe, same as planting corn in the old way, and about as deep (two inches). In planting the seedlings, each man took a spade, and a pailful of plants with a little water in the pail to keep the roots from drying; he then set the spade in the cross, a little slanting, pushed it in the length of the blade, raised it up a little on the handle, so as to

form an opening back of or under the blade, and thrust in a plant; then drew out the spade, pressed the earth back with his foot, and passed on to the next. Cuttings were planted in the same way, except that in using the spade the man thrust it in the ground by hand.

This mode of planting admits of very rapid as well as accurate work, and having the field all marked, we could plant in rows across the field or in groups, as suited us best. Some parts of the field were quite wet and sloughy, and there we planted willow, silver leaf poplar, soft maple, American larch, and such other trees as do well in wet land. On the dryer portion we planted walnut, butternut, European larch, and such trees as will not endure wet feet. Land dry enough for corn will do well for this class of trees. Then about every fourth row we planted evergreens, such as white, Scotch, Austrian, and red pine, spruce, balsam fir, arborvitæ, red cedar, hemlock, etc. Thus in time we can cut out the deciduous trees if we wish, and have a forest entirely of evergreens.

The cultivation was not unlike the cultivation of corn for the first year or two, working the ground both ways with a double rig, and hoeing near the plants the first year where necessary. After the second year we had to use a single horse and a double-shovel plow, on account of the size of the trees. We cultivated four seasons; then the trees were large enough to shade the ground sufficiently to keep down grass and weeds. In some situations and with some kinds of timber, three and even two years' cultivation might suffice; but it should be continued until the trees have sufficient size to take care of themselves, and root enough so that growth will not be retarded or stunted by a cessation of cultivation.

In my earlier planting I gave more space, rows from eight to twelve feet apart, and grew some kind of hoed crop between the rows for a few years, and of course had to continue the cultivation much longer. But I prefer close planting, especially where trees and seed are as cheap as they are here at the present time. The upward growth is more rapid in close planting, making straighter, nicer timber, and requiring less prun-

ing. My timber has mostly been left to nature's pruning, though I have assisted some. From my limited experience I think it better, where trees are planted expressly for timber, to keep them trimmed up half or two-thirds the length of the tree.

Of course the thinning must begin sooner with thick than with wide planting. But on this subject no definite rules can be given as to time. As soon as they begin to crowd and overshadow each other, the thinning should begin, and be continued from time to time as circumstances require and judgment dictates.

KANSAS.

R. J. WEMYSS,

ABILINE, CLAY COUNTY.

Manager Kansas Wheat Land Trusts — Winter Wheat Farm on the Contract System.

THE WHEAT LAND TRUSTS

farm is situated ten miles south of Clay Center, and consists of 2,880 acres, all in Fall wheat. The prairie was broken in May and June of 1879, with the ordinary breaking plow, to a depth of from two to three inches. A portion (about one quarter) was cross plowed and dragged twice, from July 20th to August 10th; the plowing being closely followed by the harrows. It was then seeded from September 10th to 20th with the "Chicago Screw Harrow," and dragged once.

The remainder of the land was not plowed, but was run over three times, from August 5th to October 5th, with the screw harrow, the seed being sown the third time, and then dragged once. The quantity of seed sown per acre was one and one-half bushels; the screw harrow having a force feed broadcast seeder.

The variety sown was:

Early Red May,	1,020 acres.
Fultz (Red),	480 "
Walker, "	290 "
Odessa, "	540 "
Clawson (White),	200 "
Kansas, "	350 "

The land is rolling, upland prairie, of limestone formation, with an immense growth of grass, blue-joint mostly. The soil is a heavy clay loam.

This work was all done by contract, the Trust furnishing nothing but the screw harrows (of which ten were used) and

the seed wheat. The labor was all done by the acre, and the contractors furnished themselves with subsistence and implements (excepting the screw harrows mentioned above).

The prices paid for work were as follows:

Breaking prairie, per acre, - -	$1 75.
Cross-plowing, " " - - - -	1 25.
Dragging, " " - - - -	20.
Drawing Screw Harrow, per acre, -	40.

The average cost per acre was $5.20 for the land cross-plowed, and $4.35 for the land screw harrowed. In November, 1879, there was no perceptible difference between the wheat on the ground that was cross-plowed and that which was not; the stand being an excellent one throughout. This wheat will be cut with the Header, and stacked for $1.50 per acre; and threshed and hauled to the railroad for ten cents per bushel, the parties doing the work furnishing every thing.

Upon old ground the cost of seeding would be about $2.00 per acre less than that of new land. With a moderate season (and it has been unusually favorable so far) and no accident, this first crop will yield about twenty bushels to the acre; but the first crop is not generally as heavy as the subsequent ones.

JOHN F. HILL,

OSWEGO, LABETTE COUNTY.

A Model Home in Ten Years — A Yoke of Oxen the Foundation — First Wheat Crop — Methods — Hard Labor — Perseverance and Economy.

SHADY SIDE.

It may seem strange that I should claim to possess a Model Farm, made within ten years, and that, too, upon the extreme limits of civilization, and within a stone's throw of the wild homes of the red men of the West. Such, indeed, is a

fact, if my ideas of a model farm and an independent home are correct.

HISTORY.

My family and myself came here from the Buckeye State, in March, 1870. This was then a comparatively new country. People were moving in from every section of the Union, taking up claims upon Government lands, building cabins, and opening settlements. As a general thing they were all poor, having been tenants in some of the older settled States, and I was no better than any of the rest. What little money I brought with me, I spent in buying a man off, who held a claim upon eighty acres of land, and in purchasing a yoke of oxen to begin with. I was not as hale and strong as a man should be, who goes to open a home on the frontier; for I was one of the many badly wounded soldiers of the late war. My help was an industrious and frugal wife, and four stout boys, whose ages were from eight to fourteen.

We began life here through many disadvantages. There were no railroad facilities then, and every thing we had to buy was high. We all went to work with a zest, and a determination to succeed. We had to deny ourselves many comforts, and use the most rigid economy, so as not to get into debt. My eighty acres of prairie land was large enough to begin with; in fact, it was as much as my boys at their age could cultivate with a single yoke of oxen. All I was able to do was to manage and superintend. To furnish employment for myself, and also to furnish us means to subsist on, I commenced teaching a country school. While the boys were at work on the farm, I was in the school-room earning money to help to live and improve the land.

FIRST CROP

The first thing to be done was to break some of the wild prairie. This was accomplished by employing a man at four dollars per acre. The boys put it into sod corn, which grew without any further cultivation, and made an excellent crop, yielding enough to more than pay for the breaking and sodding

in. We managed to get in thirty-five acres of wheat the first season; doing all the work with our ox team. We were too poor to own a pony for riding purposes. We went to mill, to market, to church, and to visit friends with our ox team. I might tell many amusing incidents of our pioneer life, if my article was upon that subject. The first year we were upon the farm we had nothing to sell. My only income was my salary as a teacher, and a small pittance which the Government gave me as a pension. That year we made and raised enough to keep just soul and body together — poor and hard as it was.

Our first wheat crop was a very good one, for the ground was fresh and the season favorable. The crop yielded eight hundred and sixty bushels. After keeping seed and bread out, the remainder was sold, and after paying out all expenses, it left us a profit of over three hundred dollars. This, with my wages of three hundred dollars for six months' teaching, gave us, as we thought then, a good capital to begin with. Our first investment was in fruit trees, which however, should have been planted earlier, for it took years before we could realize anything from them. A portion of this money we also spent in building a more comfortable dwelling. The house we were living in, had been put up by the original squatter, and was of round, unhewn logs, the cracks daubed with mud, and had a stick chimney for a fireplace. The whole thing would not make a comfortable stable in an old settled State. The remainder of the money was spent for domestic stock, and a few necessaries of life.

PROGRESS.

The second year we broke more prairie, which went into sod corn; and we also put in that Fall forty-five acres of wheat, all the work being done by the boys and the single yoke of oxen. The wheat crops were then sown broadcast, on account of the ground being too soddy to use the drill. I taught again that Fall and Winter, and the boys went to school. In the season following, our crops were very good, and we had a bountiful supply of most every thing. Prices were generally

good, and when all our produce was sold, and all the expenses paid, we found that we had a good profit left to invest in something else. We concluded then that our farm of eighty acres was too small, so we bought and added forty acres more adjoining. We also bought more farm utensils and machinery, and some more comforts for the house.

The next year we broke more prairie, put in a larger acreage of wheat and other grains, so that when the next year's settlement was made, we found that our profits had increased in proportion also. More land, stock and machinery were bought, and also, more improvements were added to the house, the orchard, and the farm. The same plan was pursued the next year, and the next, and so on, down to the present time. Every year we would put out more crops, add more acres to the homestead, make additional improvements over the farm, and increase our comforts, till perhaps we may be now allowed to claim that we have one of the best homes of the country, and a

MODEL FARM.

Our homestead consists of three hundred and forty-four acres, all in one body. Of this, two hundred and eighty are in cultivation, and all is under a good hedge fence. I have a good dwelling house, large barn, and all kinds of out-houses, too numerous to mention. Also, an orchard of over one thousand fruit trees — some bearing, and others just beginning to bear — consisting of apples, peaches, pears, plums, cherries, apricots, nectarines, quinces, grapes, and all kinds of small fruit. Besides this, there are farm tools and machinery of all kinds, with horses, cattle, mules, and hogs sufficient to carry on a farm of this size. The house is well situated on a rise, thirty rods from the road, with a beautiful yard and artificial grove in front and rear, containing evergreens and forest trees. Through the yard are walks and drives, and along their borders are found shrubbery and flowers of all kinds growing. My farm lies on each side of a public road. The dwelling house, orchards, and garden are on the west side, and on the east are

the barn, stables, cribs, hog pens, and feed lots. These are far enough from the dwelling to prevent our being annoyed or bothered with the filth and stench incident to the barn yard.

HEDGES.

The hedges are mostly from four to eight years old. They are kept neatly trimmed, and woven down, so as to make them hog tight. The hedges along the road, which is sixty feet wide, have ten feet of dirt thrown up to them from the road. Between this ten feet of dirt and the road proper, are ditches on each side that drain the road. Between this ditch and the hedge there is a row of forest trees planted on each side, just one rod apart. Along the hedges through the fields, the dirt is thrown up to the hedge again, making good turning-rows and wagon roads all around the fields. Around the hedges the weeds are kept down by constant mowing.

SHEDS.

Sheds are prepared annually for all kinds of stock that we are able yet to Winter. We find it is much cheaper to have good shelter than to feed an extra amount of grain. Our hogs are fed on wooden floors, and in close pens, off the ground. Enough feed can be saved every year in fattening a lot of hogs, to build the pens that hold them.

METHODS.

Our method is to do the work amongst ourselves, with as little hired labor as possible. We never attempt to raise any more of any one product than we can properly handle and save without waste. If we make more of a specialty of one crop than any other, it is wheat. We make it a rule to hurry our work, but never allow our work to hurry us. I have never yet found any thing that would pay if turned off in a slovenly fashion. What is worth doing is always worth doing well. I never venture into wild speculations. When I find that any particular crop will not pay expenses, I drop it. I have never adopted a rotation of crops yet, but think I will after the soil

begins to decline. At present the soil is so fertile and inexhaustive that wheat crops do better to follow each other.

WHEAT,

which is three-fourths of my crop, requires that the ground be plowed early and become well packed before seeding time. I sow early, and have the ground well drained; also harvest and get into stack and granary in due time. I never sell until the prices will justify me in so doing, even if the wheat should have to be held over till the next Spring. The same process and plans I adopt in the raising of any other grain. I never speculate upon other men's money, never buy unless I have the money to pay with. I shun debts as much as one would the leprosy. What I have not the cash to buy with, I do without. When I have the means, I do not spare the cost in having good tools, machinery, seed and stock. As there is much money invested in farm tools and machinery, I find that there is much money saved by storing them away in the dry as soon as done using them. I appreciate the saying as a very truthful one, that "a penny saved is two pennies earned."

CONCLUSION.

The reasons why I am disposed to call this farm a model one, are,

First: Situation. It lies midway between two rival towns on the Missouri, Kansas & Texas railway, four miles from each. These towns contain over 2,000 inhabitants each, and are in the heart of Neosho Valley.

Second: What I have, I have made myself, and that on the farm, by hard labor, perseverance and economy.

Third: What I have is paid for; paid from the products raised on the farm, and those products raised by my own labor and the labor of my family.

Fourth: There is no mortgage upon the farm. That alone should make it a Model Farm, in this day, when nineteen-twentieths of the farms in the country have this curse upon them.

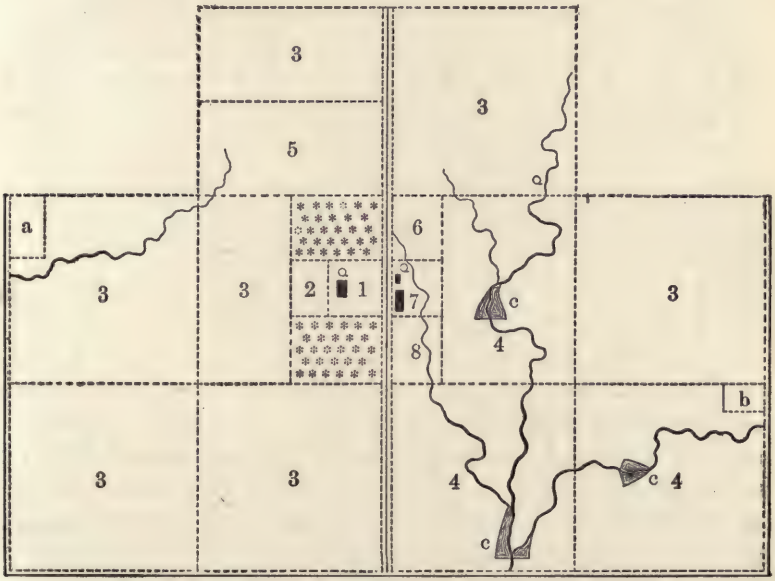
Fifth: My farm has always paid a good income above

all expenses, even at times when we had to battle against drouth, chinch-bugs and grasshoppers.

AXIOM.

What I have done in ten short years, any young man with a family, who is nothing more than a poor tenant in some of the Northern or Eastern States, can come and do likewise.

NORTH



SHADY SIDE.

EXPLANATION. — Scale, 80 rods to the inch. 1—Yard and dwelling. 7—Barn and barnyard. 2—Garden. 3—Cultivated lands, mostly in wheat. 4—Pasture. 5—Meadow. 6 8—Lots for young stock. a—Three acres cemetery. b—Two acres school-house. c c c—Artificial ponds. ——— Public roads. ------- Hedges, Osage orange. ° ° ° — Wells. ⁂ — Orchards. ~~~ Deep sloughs, from four to eight rods wide, and about ten feet lower than the level of the prairie. Remainder of the land level.

J. L. HODGES,

FRANKFORT, MARSHALL COUNTY.

How to Plant and Trim Osage Hedge — How to Arrange a Raw Prairie Farm — Winter Wheat Culture.

I own a half section of land lying half a mile directly north of the city of Frankfort. I took possession of the land on the 6th day of June, 1872. It was raw upland prairie; it lies in the form of the diagram, all under cultivation except the two forties on the creek, which are prairie grass and native timber.

HEDGE.

I have hedge fence at every place seen on accompanying drawing, planted four years ago last April. Plants were put out two years old and cultivated two years, then cut off to the ground, cultivated one year and then braided close to the ground, and grown again one year. I then cut them off two and and one-half feet from the ground and laid the brush lengthwise of the fence. As far as I have finished it I have a fence that will stop pigs, chickens, or stock of any kind. I intend to cut once more at four feet high, and lay the brush the same, then let it grow for a windbreak, except along the road; there shall keep trimmed.

ORCHARD.

I have an apple orchard of three hundred trees planted six years ago last Spring, two and three year old trees. They have grown well. These bore some apples a year ago, but last Summer they did not blossom. I have manured every year and cultivated the orchard in corn; it is now in Fall wheat and looks nicely. I shall seed it with clover in March.

BUILDINGS AND GROUNDS.

I have a small plot of ground around my house, seeded to

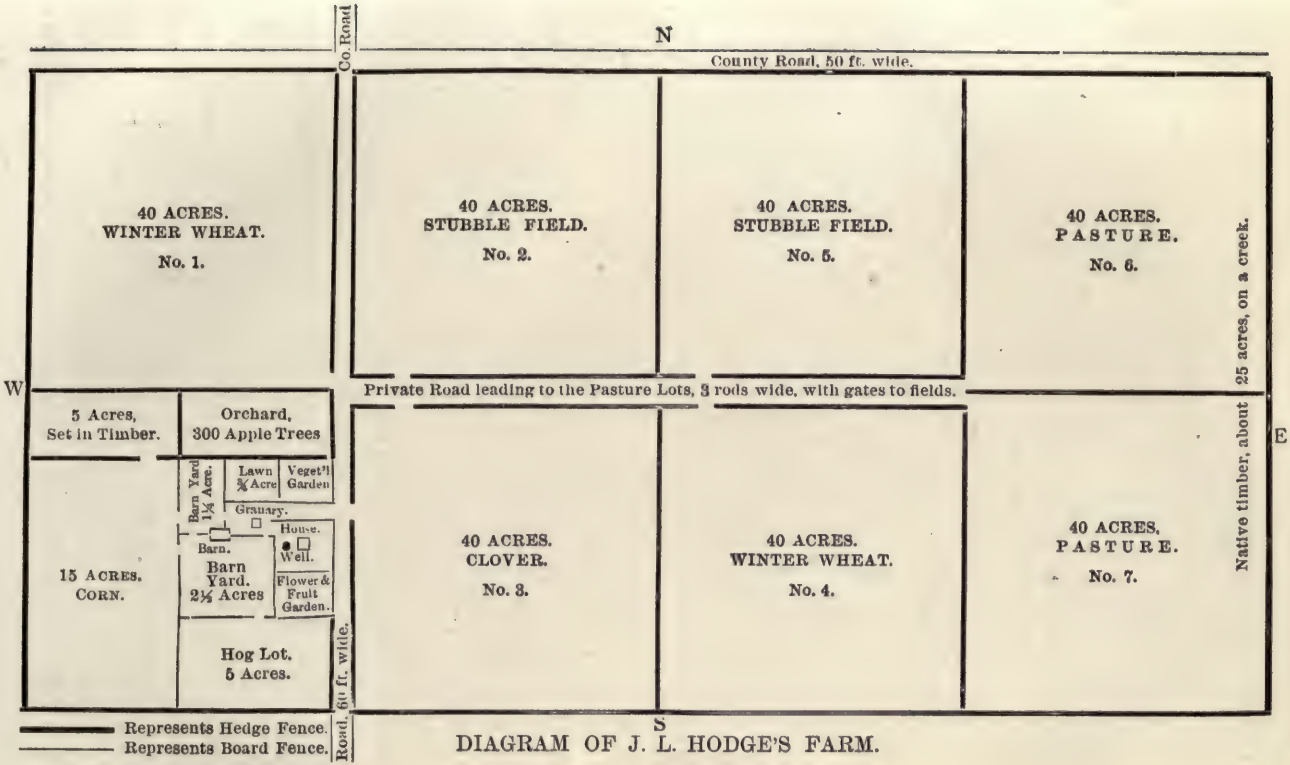


DIAGRAM OF J. L. HODGE'S FARM.

red clover. It has been seeded five years and I never saw clover do better any where. I think if we put clover on our land we can not kill it by any fair means. My house is a one and a half story frame, upright 14x28, standing with the end to the road, and has south front and porch fronting the flower gardens. It has a wing 20x22 on the north side, with an east front and porch fronting the road, with a cistern under this porch, that holds two hundred barrels, and a pump standing in the porch; also a west kitchen front leading to the well and barn. The house stands about the center of the plot, which is planted with all kinds of trees—maples, black walnut, evergreens, on the east, peaches on the west, plums, cherries, pears, on the south. On the north is a driveway between the vegetable garden and dooryard leading to the granary, barnyards and orchard. A plot of one-quarter of an acre on the south of dooryard, contains flowers, strawberries, raspberries, blackberries, grapes, quinces, crab apples, peaches, and other fruits. I have a plot of one-quarter of an acre on north of driveway, lying between the driveway and orchard for a garden, with fruit trees next the road. West of the vegetable garden is a lawn of three-fourths of an acre, and south of lawn is one-fourth of an acre with granary in the center, 26x44, making granary, carriage-house and tool-house, leaving a driveway clear around it, leading to both yards and to the barn also, through the lawn to the orchard. The barn is 40x50, facing north and south, between the two yards. This is designed for a general farm and grain barn, with sixteen feet in width taken off the east end fronting the granary lot for horse stables, with a hay-loft over the horses. My north barnyard is one and a quarter acres and the south one is two and a half acres, with posts set seven feet apart and three boards at the bottom; then comes a galvanized barb wire, next a plain barb wire. The same fence is around the hog lot except the roadside, which is hedge, and which holds pigs or any other stock.

I have given a fair description of my small yards. I will describe my fields and mode of cultivation. I Summer fallowed my first field last Summer and shall sow the same to

clover. I designate the fields by numbers, as will be seen by the diagram.

ROTATION OF CROPS.

Number one is my oldest field. I Summer fallowed that in the Summer and sowed it to Fall wheat, and will seed it to clover in the Spring. The following season I will mow in June for hay, and then cut again in the Fall for seed, and pasture the next season. The following season I will plow the clover sod for corn, and the next plow the corn stubble for oats and barley in the Spring, or make it fallow again for wheat. My plan is to have a rotation of crops. My main crop is Fall wheat; I intend to have two of these forties in Fall wheat every year, one in corn, two in clover, or clover, oats and barley, and my small fifteen acre I will use as occasion requires. I shall have to vary some, possibly, but will always keep two forty acre lots in Fall wheat, and one in corn.

STOCK.

I commenced the improvement of this farm as follows: I built the house, and then I had the county surveyor lay it out correctly as it is seen on the plot. Next I broke the bounds for all the hedges, and then went to work and made the farm as fast as I could. I keep about two hundred sheep, twenty head of cattle, fifty hogs, and ten to fifteen horses, mules, and colts. I have on the farm two good three-horse teams, and two good two-horse teams, and two or four colts growing all the time to keep these teams good. My farm has no stone or obstructions of any kind. I have raised over 8,000 bushels of Fall wheat since I commenced.

I was born in New York State, near the city of Rochester, Monroe county, in 1820, and lived there and in Genessee county until I came to Kansas seven years ago. I think I know what good farming is, and hope to live to see this State put under good cultivation, and then I believe we will have the best State in the Union.

F. A. FENTON,

INDIANOLA, BUTLER COUNTY.

A Dairy Farm—How to Keep Pastures Fresh and Green—Butter—Rearing of Calves—Hogs—Millet—Climate.

My farm consists of 205 acres of bottom and upland prairie. One hundred and twenty acres of this are under cultivation, the remainder is in prairie pastures. The farm implements used are John Deere sulky plow, Gilpin, (very good plow, by the way,) also a very good harrow (no name). This last implement is so constructed that you hitch to one end and the teeth will be straight; by changing and hitching to the other end the teeth slant, thus making an excellent harrow for harrowing corn while young. I use the Peru City corn cultivators, and they have proved the best with us. Keystone corn planters give the best satisfaction here. I can claim no precedence in raising corn or oats, although they have been raised at an average cost in crib and granary of fifteen cents per bushel for corn, and eighteen cents per bushel for oats. All grain produced and much more bought, is fed to milch cows and made into butter. I keep twenty-three cows, mostly grade Durhams, and a few grade Devons. Both I find very good for dairy purposes, and they also make good beef.

PASTURE.

Prairie pasture in Kansas makes good beef for market, and cows yield an abundance of most excellent milk. The pasture may be kept up until late in the season by burning off a fresh piece of ground (prairie sod) every few weeks during the Summer. Finally, when prairie pasture fails, you must be prepared with some green crop to take the place of green grass. Corn sown broadcast, or, better, drilled, from about the middle to the last of June, makes an excellent crop for this purpose,

and should be fed freely, always remembering that the more you can get a cow to eat the more milk you will get in return. Rye is sown about September 1st; if sown earlier it is killed by chinch bugs. It does not generally make very good pasture in the Fall, but in the Spring we get six weeks of fine pasture before the grass comes.

DAIRY.

When green feed fails I feed grain. Corn and oats I mix half and half, and grind on the farm by one of the Challenge mills. This I feed in proportion to ten quarts per day to each cow, changing occasionally to corn meal, and bran, and shorts. Those who have never fed corn meal I would advise to try it, if they want good, rich milk, and desire to have their stock kept in good order. I would urge all persons keeping stock, and especially those keeping milk stock, to care for them well if they want to make them profitable. Keep them well in Winter, and see what a vast difference in the returns of the next Summer. My milking, feeding, etc., is done as regularly as possible. My cows are all stabled in Winter. My milk I have set in open pans, and allowed to stand from thirty-six to forty-eight hours before skimming; it is then soured a little before churning, and churned in a Blanchard churn at a temperature of fifty eight degrees in Summer, and sixty-two degrees in Winter. If every condition is right, butter should come in about forty minutes. As soon as it comes, the buttermilk should be drawn off carefully, and cold, clear water dashed on to the butter; then remove it to the butter worker, after being properly gathered. Then we put on more water, until the water, when drawn off, is clear. After that, work the water out (with a Reed's butter-worker), and salt with three-quarters of an ounce of dairy salt to a pound, if for present use, letting it stand two or three hours, then working again. If the butter is to be kept any length of time, it is better to allow one ounce of salt to the pound, and let it stand about twelve hours before working, after which pack in nice clean packages and cover with strong brine. My butter is all put up in small packages, from four to sixteen pounds in each package, and delivered

to private families in Wichita, at an average price of twenty-three cents per pound.

RAISING CALVES.

My plan of raising calves is to take them away from the cow as soon as dropped, and put them in a small stall for a time, giving them the mother's milk at first, and gradually substituting skimmed milk, with a very little flaxseed ground and boiled into a jelly added. Give them your finger at first, but withdraw it gradually as soon as they begin to suck. By this means in from one to three days you will have them drinking nicely. I let them have access to hay whenever they want it, and they commence eating pretty early, too. In a few weeks I give them a little corn meal, gradually increasing the feed as they get older. In this way very good calves can be raised cheaply, without new milk.

HOGS.

I very much prefer the pure Poland China swine to all others, and have had them dress 300 pounds the day they were eight months old. I have sold them on the market at just six months, when they would average 220 pounds. I have them pig about April 1st and September 1st, and give them plenty of good slop. As this breed is of a contented disposition, they will eat, lie down, and grow fat. I had one sow that I let run, and she never strayed 200 feet from the pen. I wean them at about six weeks, and give them the best care so that they may not have a set-back. A little linseed jelly in their slop about this time is excellent. The way to make hogs pay is to get them into market at eight to ten months old.

Millet grows finely here, and large quantities are raised for feeding stock and for seed. It sometimes yields five and six tons of splendid hay per acre, but is very hard on land. There are no tame meadows to speak of in this country, as yet. We are comparatively new, as it is only eleven years since the Indians were here.

CLIMATE.

Our climate is very healthy. There is a dry atmosphere

very beneficial to lung complaints. We have few fogs or rainy days; showers come and go, and the sun is soon out once more. Land is generally good, and the bottoms are hard to beat for fertility. There is very little need of draining.

This is an excellent country for an industrious man to come to. If he has a little means he can secure a home for himself and family cheaply. If he has no means he can rent good land by giving one-third of the corn in crib, and one-third small grain in the bushel. It is no place for a lazy man; in fact, there are too many of that kind here now. And the man who is well fixed in the East had better stay there and not change.

C. B. SPAULDING,

HILLSDALE, MIAMI COUNTY.

The Culture of Corn and Winter Wheat — Graded Durhams — The Poland China and Berkshire Cross Recommended — Best Time to Breed Sows and What to Feed — Meadows — Dairy — Poultry — Fruit.

I emigrated to Kansas in 1859, at a time when the country was sparsely settled, and located in 1862, on eighty acres of land in Miami county, which have ever since been my home. The improvement of my land, and how I could best accomplish the desired results with my limited means, have occupied a large degree of my attention. As I am not of a very "shifty" turn of mind, that is, not given to much traffic, like money in a new country, my experience and success have been through a steady and unrelenting tilling of the soil. My farming operations have been a mixed husbandry, which I believe to be the best course for a small farmer to pursue (a course, too, that larger ones would do well to follow). Every farmer should make his farm self-sustaining, compelling it to produce as nearly as possible all that is needed for home consumption.

MACHINERY.

I have invested in machinery and implements that would

insure my crops being attended to in proper time, as the farmer often sustains great loss by not having the requisite machinery at his command. My farm implements and machinery are as follows: Furst & Bradley iron beam plow with Cahill riding attachment, Brown's corn planter, Imperial Riding Cultivator (in use four years), Old Buckeye wheat drill (in use eight years), Improved Climax reaper and mower combined (in use five seasons), Spiral stalk cutter, Burell corn sheller, fan mill (seven years in use), Big Giant corn and cob crusher, and other implements to meet my wants. Some of my machinery has been in use quite a time but it is to-day nearly as good as when bought. I have managed it upon the idea that if it pays to buy an implement, it pays equally well to house and care for it when not in use.

CORN.

My farm is upland prairie, high elevation. Much of it is rolling, consequently must be strongly tested by drouth in a dry season. It is my custom to turn under the stalks and what vegetation may accumulate, together with the manure made at the outbuildings, believing it will return good interest in the half bushel. I plow as much as possible in the Fall, and deep; if not in the Fall early in the Spring, so that my corn may be planted in good time. I prefer to plant in April if the ground is dry, even though it be cold. My experience and observation have taught me that corn planted early (condition of the ground being favorable) produces a larger yield. I "tend it" exclusively with the cultivator, unless it continues dry after it comes up, in which case I run over it with a roller. My corn crop on a yearly average amounts to about thirty acres, with an average for this year of forty bushels per acre, which is raised at a cost of ten cents per bushel. I crib early, in well-covered cribs, and convert it into pork, believing that if I do not realize more for it, it is a much easier way of getting it to market. I believe, however, that I get better returns for my corn in pork than in its natural state.

WHEAT.

With reference to wheat, I have sown it every year since

living here, and I have had very good success with it, seeding about twenty acres a year, and realized for several years past about twenty bushels per acre. My plan of culture is to spare no pains in preparing the soil. If I can break the ground soon enough, that I may have time to pack it well by rolling and harrowing, I break it tolerably deep; otherwise I plow shallow. In this case I completely pulverize the soil to the depth of three inches, so that the seed may have a good bed to germinate in. Sow with drill from the first to the fifteenth of September, with one bushel of seed to the acre. If flies are working much, I defer seeding to the last of September or the first of October, in which case it will be necessary to seed a little heavier. I do not pasture my wheat in the Winter. I harvest my Winter wheat when the grain has reached the hard dough. I am particular to put it into the stack as soon as it is fairly cured in the shock. I have never sustained any loss from damaged wheat in the stack, and do not expect to, as long as I do my own stacking. The cost of raising and putting into the half bushel, without counting the board of hands and feeding teams, is thirty-seven cents per bushel, at twenty bushels per acre. I sell my wheat at the home mill. I consider a light dressing of manure on wheat land very remunerative. I raise but little rye and oats, and no barley.

MY EXPERIENCE WITH MEADOW LAND

is, that timothy alone needs to be rebroken and seeded about every three years, but if mixed with clover it will last much longer. I pasture my meadow Fall and Winter, except when the ground is wet and miry. I believe it better to pasture but little in the Spring. I am using both clover and timothy on pasture land.

CATTLE.

I breed the common natives, crossed with Durham. They produce a cross which I consider well suited to beef and dairy purposes.

HORSES.

I am breeding my mares to Norman horses, as I believe they will produce the best stock of horses for general farm use.

I believe in, and act on the principle, that all stock requires the attention of the farmer in sheltering them from the inclement weather.

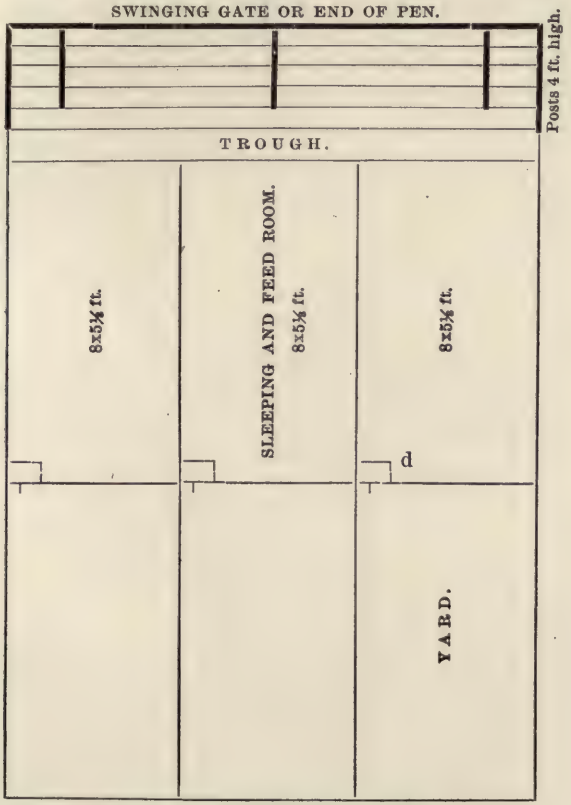
HOGS.

For the last five years I have given my attention to the pure Berkshire breed, believing them to be hardy and prolific, maturing early, with a comparatively small amount of feed. I believed them to be the hog for Kansas, but observation and the past year's experience have convinced me that a cross between the Poland and Berkshire produce a better and more desirable hog. They are more quiet in their habits, grow more uniform in size, and make larger hogs, with a like amount of care and feed in the same length of time, than the Berkshire. My plan is to use the pure Berkshire sow, and a well bred Poland boar. As the Berkshire sows are less in size, and more prolific, consequently they make better mothers and are more certain to raise their young. I think it best, when a sow has proven herself good as a breeder, to keep her for years, as her pigs will be likely to be more hardy and less subject to disease. Do not let the pigs come until late enough in the Spring, that the sows may be able to soon get grass after farrowing. As soon as the pigs are old enough, or manifest a desire to eat in the trough with the sow, I arrange a little apartment where they can be by themselves, and there feed ground feed.

MY SOWS GRAZE UPON CLOVER AND TIMOTHY.

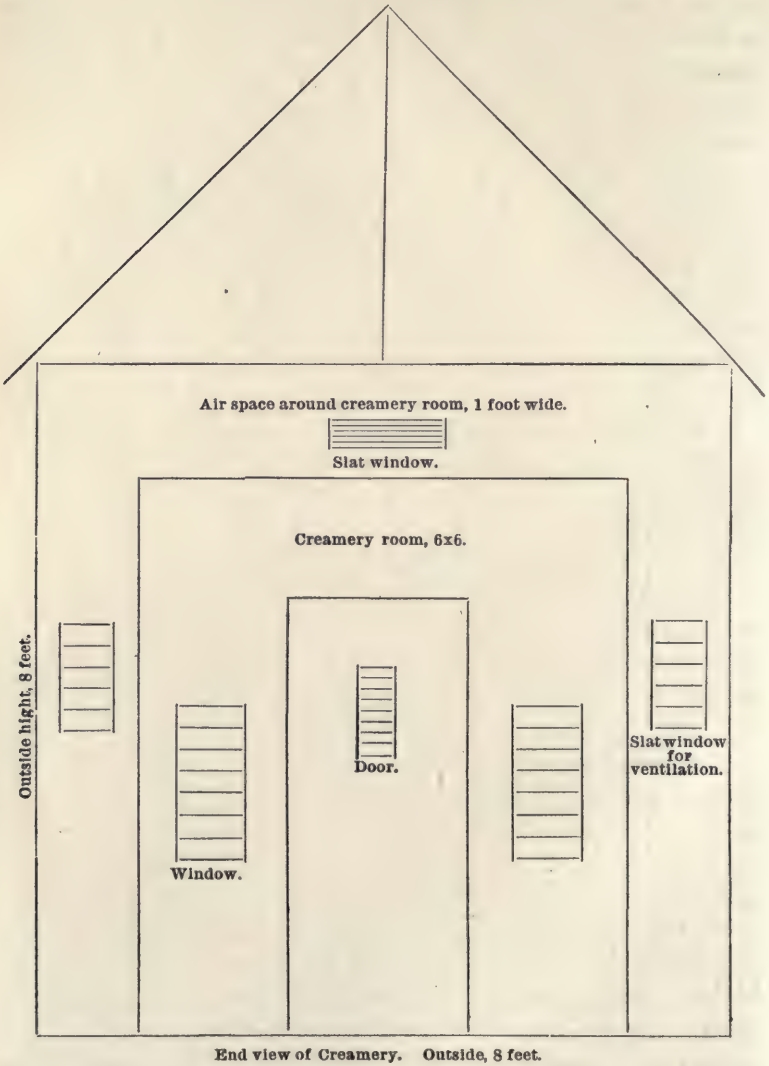
I favor the plan of allowing sows to bring but one litter of pigs a year, as Fall pigs often get stunted, and then the farmer can not save himself in preparing them for market. I use feed ground with the Big Giant crusher; think it pays to keep pigs thriving and fat till they are ready for market. I attend to keeping them well sheltered, so that they may have a warm and cosy place to sleep, with plenty of salt and ashes; also good water to drink and, if possible, to wallow in. I feed my fat hogs as much as possible on plank floor. I believe it will pay twice over the expense. Fed in this way they will take less dirt into the stomach. A hog is a clean animal if we only give him a chance to be, and cleanliness is one of the essential

requisites to health. I have this year allowed my sows to have but one litter, all running together until the pigs wean themselves, feeding ground feed all the time.



GROUND PLAN OF HOG PEN.

The swinging end, suspended on the posts, forms the end of the pen when hanging perpendicular; and, on feeding hogs, it is swung in till it strikes the inner side of the trough, and is there held by some simple fastening, such as a pin or latch. After the trough is cleaned, if necessary, and the feed poured in, the end is allowed to come back to its perpendicular position. Then the stock has free access to their feed. This will save much trouble while feeding.



End view of Creamery. Outside, 8 feet.

The above is the plan of my Creamery. I have only given a view of the entrance end, which should be toward the north. The opposite end is designed to have the air space round the creamery room. A window should open into the space at that

end. The spaces at the side might be wide enough to receive a barrel of salt, or other dairy fixtures. Access to them would then be by way of doors. This building will keep milk cooler in Summer than any other arrangement, without it is in some way connected with an ice house.

DAIRY.

With butter we have the best results from tame grass pasture. Our milkers are grades (Durham cross) and natives; they give satisfaction. As there are two cheese factories in this county, at times the supply of butter is inadequate to the home demand.

POULTRY.

I succeed best with a mixed breed of fowls. The White Brahmas and Black Spanish suit me best. They are hardy, good layers, and their flesh is good for table use. I am not troubled with cholera among my chickens. I part with the old hens in the Fall, and change the roosters. By so doing we keep the stock healthy. The fowls have free access to the corn crib, and occasionally my wife feeds them sulphur and black pepper mixed in ground feed. They have well-sheltered roosts.

FRUIT.

I have three hundred apple trees; also a number of peach, cherry, and pear trees, with grape and other small fruits. My orchard was planted in 1862, and has been attended with much care and labor. Notwithstanding the amount of care I have given it, the borer has been very destructive to many of the trees. There is no remedy as effectual as the knife and wire. I cultivated the orchard in small grains and potatoes till the trees were too large to plow among, and then seeded down to clover, upon which I pastured my hogs, a course which I found very beneficial to the trees. I have also followed the plan of mulching the trees every two or three years, with good results. It adds size and beauty to the fruit. I do most of my pruning in February. The fruit finds a home market. Varieties that have proved worthless, I top graft in the Spring as soon as the sap

begins to flow freely, using a wax composed of four parts resin, two parts beeswax, and one part tallow, well mixed together.

HISTORICAL AND STATISTICAL.

As a farming country, and healthy climate, Miami county is as good as any in the State. This county is second, in the eastern tier of counties south of Kansas City. Paoli is the county-seat, on the Kansas City, Ft. Scott & Gulf railroad, forty-two miles from Kansas City. The population of the city of Paoli is 1,974; the population of the county is 16,000. Of bottom land there is twenty per cent., upland seventy per cent., timber ten per cent. Of the 376,320 acres in the county, 155,872 acres are under cultivation. There is a high and normal school in Paoli, ninety-six school districts in the county, and thirty-six churches. The Kansas City, Ft. Scott & Gulf railroad runs north and south through the county. The Paoli & Holden road runs from Holden, Mo., on the Missouri Pacific to Paoli, and the St. Louis, Kansas & Arizona railroad runs from Paoli southwest through the county to Garnett. The total valuation of all property in the county is $7,000,000. It is healthy and well watered, and as an agricultural and stock raising country, is conceded to be the empire county of the State.

ALBERT MOLER.

MINERAL POINT, ANDERSON COUNTY.

A Stock Farm — Three Hundred Acres in Corn — High Grade Cattle the Most Profitable — Good Shelter but not Confinement Recommended — Kentucky Blue Grass a Success.

My farm is situated in the northwest corner of Anderson county, and on the head waters of Pottawattomie creek, two of its branches running through the farm, which, with one artificial pond, gives us water in every field. The farm consists of six hundred and forty acres, of which five hundred and

fifty were originally prairie, remainder timber. There are four hundred acres now in cultivation; remainder, including the timber, in meadow and pasture.

Usually I raise three hundred acres of corn, and fifty acres of oats and Hungarian grass, and twenty acres of Winter wheat, which produces twenty bushels per acre. The corn crop of 1879 was a fair yield, averaging fifty-five bushels per acre. My mowing land produces two tons per acre. I am much pleased with my Blue Grass pasture, which as early as November comes out fresh and green.

CORN AND WHEAT.

I commenced on this farm just as the Indians left it fifteen years ago—plowing the first furrow. The first season I broke one hundred and fifty acres and planted it in sod corn, which made about thirty bushels to the acre, and was worth enough to pay for breaking the land. I have broken more or less ever since. Sometimes I sow Fall wheat on the freshly broken sod, which generally produces from twelve to fifteen bushels of good wheat, worth about as many dollars. The second year I cross-plow the last year's breaking, and plant it in corn, which, with two plowings, generally produces from forty-five to seventy bushels per acre. As the land becomes older it requires more cultivation to keep the weeds subdued. After cultivating four or five years, I sow it in mixed grasses—clover, timothy, orchard grass, and Kentucky blue grass. The last named runs all the others out in about four years. In order to secure ourselves against prairie fires, I broke a fence row all around the farm about a rod wide, on which we constructed a fence three boards high, and then fence rows across the farm, leaving the fields as large as possible. The following Spring I planted Osage orange hedge just inside the board fence, which, through reasonable cultivation, has, in about five years' time, enclosed the farm with good hedges and the fields also. These are one corn-field of two hundred and forty acres, one of one hundred and sixty acres, two of eighty acres, one of forty acres, and several of ten and fifteen acres. The board fences can be

removed in about five years, when they may be used again on other land. I have many native timber posts fifteen years in use, that are sound enough to last several years yet.

STOCK.

My stock consists usually of one hundred and fifty cattle, or about that number. Forty of them are thorough-bred Short-Horns, the remainder three-fourths and seven-eighths blood Short-Horns. The steers I sell at three and a half years' old, averaging sixteen hundred pounds each. They sell from seventy to ninety dollars per head, at home. We weigh them on our own scales. The thorough-bred male calves sell readily to other farmers, at from one hundred to two hundred a head. Farmers here are generally discarding their common cattle and getting the Short-Horns, that will weigh nearly one-third more at any age than the common cattle. A few years ago I stall-fed a lot of high grades and a lot of good common cattle. I weighed them when commencing to feed, and after feeding six months I weighed again. The common cattle had gained four hundred pounds per head, the grade cattle had gained six hundred per head, a difference of two hundred pounds in favor of the grades.

HOGS.

After trying several breeds of hogs, I have settled down on Poland China or Magie. They are, with me, entirely free from disease. There never has been a case of hog cholera in this county, or this part of the State. They are great eaters and growers, and at fifteen months' old will average, with plenty of feed, about four hundred pounds. I think our hogs do best to have all the grass and roots they can eat, in a large pasture along the creek. They should have plenty of shade in Summer, and a good dry and warm place to sleep in in Winter. I do not spay our sows, but let them produce two or three litters of pigs, and then fatten them, when they will weigh five hundred pounds. I buy a boar from Iowa or Illinois, about every year.

My buildings consist of a large stone house containing

fifteen rooms, and a banked barn sixty by eighty, originally intended for a cattle barn. But after several years' experience I have become convinced that cattle will do better, in the long run, when not confined in stables, but with plenty of shed room to go under when they want to. I am sure they will be healthier and longer lived. They will grow faster for a short time if kept in stables, but with me quick growth means quick death.

GEORGE HAY,

SENECA, NEMAHA COUNTY.

A Stock Farm Made in Five Years — Arrangement of Yards and Sheds — Feed Racks and Troughs — Poland China Hogs.

STOCK FARM MADE IN FIVE YEARS.

While I do not claim to have a "model farm," yet I shall venture to give a brief description of a farm, which, I may say has been made during the past five years, by persistent industry and effort, and with very limited means, and I propose to show what may be done with a raw piece of prairie by a vigorous application of method and muscle, governed by an experience in farming and stock raising, reaching through about twenty-five years, and a cash capital not exceeding $6,000.

BOUGHT THE LAND IN 1873.

I came to this county in the Fall of 1873, with the intention of engaging in stock raising. Being desirous of locating my family where good educational facilities existed, I purchased land in close proximity to Seneca, a flourishing little town, situated on the St. Joe & Denver railroad, for which I paid $3,150 for three hundred and twenty acres unimproved prairie. In the following Spring I commenced the work of improving the tract.

HOW I FENCED THE FARM.

I enclosed the land, which consisted of two separate tracts of one hundred and sixty acres each, not adjoining each other,

with a three board fence. The lumber was purchased at wholesale rates, by the car load, at the rate of twenty-three dollars per thousand feet. The posts used were chiefly burr-oak, and cost from ten to twelve and a half dollars per hundred. The recent introduction of barbed wire enables the new settler now to build a fence, more durable, and more cattle proof, with about one-half the number of posts, and at a much less expense for wire than for lumber purchased in this portion of the West. Speaking of fencing, I venture the remark that the Osage orange flourishes so well here, that farmers who neglect to set out hedge at the earliest opportunity, make a very great mistake. They can in four years after setting the plants have a fence that will not drop down, and which can be made a complete protection against the depredations of either hogs or horses.

ARRANGEMENT OF YARDS, SHEDS AND RACKS.

As it was my intention to devote myself, almost exclusively, to the raising of cattle and hogs, I reserved a very liberal portion of my land to stock yards, and feed lots, with suitable pasture for colts, calves and hogs. My cattle yards are made on grounds sloping gently to the south. I have the necessary amount of shedding and cow barns on north side of main cattle yard. I use racks made of pine lumber to feed hay to the cattle. The size of each is sixteen feet long, five and one-third feet wide, two and one-half feet high, with a partition in the middle, rising two feet above the rack, making it equal to a single rack thirty-two feet long. For top of rack I use two by four inch stuff, which I bolt on to corner posts, made of four by four inch stuff. I have recently put in feed boxes three feet wide, by sixteen feet long, with tight bottom, in which I give my stock cattle their small daily allowance of oats, shelled corn, or ground feed. This I consider a very economical method, and vastly superior to the more common way of throwing down a lot of corn for the cattle to trample under their feet, or into the mud. With a view to the future protection of the cattle yards, I have planted a grove of nearly one thousand walnut,

trees on the north, and an equal amount of young cottonwoods on the west. Adjoining this main cattle yard on the south, is a commodious yard for stacking hay and straw. In the shelter afforded by these stacks, are the calf lots. These are provided with racks, built along the fence, and convenient to the hay rick. In these lots also, there are the necessary troughs where the calves get their daily allowance of corn or oats, and where also they are salted. These yards are provided with a sufficient amount of board sheds into which the calves can go at will, and be protected from the rain or Winter storms. Under the same roof is a room about twelve feet square, which is used as a Winter nest by my brood sows, who have the run of an adjoining lot of six or eight acres. This lot is watered by a small branch, but, as this at times makes a very muddy or icy watering place, oft-times dangerous for cattle in the Winter season, I have a well on the same lot provided with a pump, windmill, and suitable tank, which affords a constant supply of good water, at all times easy of access to man and beast. Near this well I have a feed lot where steers and hogs are fatted for the market. This lot is also provided with necessary sheds to afford the cattle and hogs a retreat from the cutting Kansas winds. The yard is also furnished with feed boxes into which the corn is usually thrown with the husks still on. This is almost their exclusive feed, and there are many farmers who do not give their fattening cattle any hay at all while feeding snapped corn. A great deal of whole corn passes through stock fed in this way, but here the hog steps in, and proves a very economical animal where this mode of feeding cattle is practiced. I find, in my experience, that where twenty steers are fed in this way, about thirty hogs will get very fat with a very small amount of extra grain. This feed lot is supplied with water from the well, conveyed into a tank by underground pipes. Attached to this tank I have a watering trough, of my own invention, for hogs, which is without a patent, and yet answers a good purpose. It is simply a plank trough about one foot wide, over which there is a strong lid, fastened down with iron hooks. This lid is full of holes just large enough to

admit the hogs' snouts, without giving them the usual opportunity of sticking in their dirty feet. By this plan, the hogs are furnished with water which is comparatively clean. When mud collects in a trough of this kind, it can be cleaned very easily by raising up the lid, something which will readily be appreciated by those who have tried to clean out a hog trough. Where a number of cleats have been nailed across the top they answer the purpose of a lid.

IT IS VERY ESSENTIAL

that the fence around a feed lot be made very strong. From experience I have found that a fence built five boards high, with two or three strands of barbed wire stretched on the opposite side of the posts, to which the boards are nailed, makes a very safe fence, and is the most durable that I have tried.

STOCK.

I commenced the business of stock raising by purchasing native cows. I have now a good thorough-bred bull, and find that even the results of the first cross are very satisfactory. To give an idea of the quality and value of such calves when about eight or nine months old, I may say, that my son, who is in partnership with me in the business of stock raising, sold his share of the calves on a credit of nine months, the steers averaging $16.50, and the heifers about $14. I have tried almost every breed of hogs, and have arrived at the conclusion that the Poland China is decidedly the hog for the million. He is a hog of a remarkably good disposition, a hearty eater, grows rapidly when well cared for, can be fattened at any age, and is remarkably free from disease. Every farmer who has to keep his hogs shut up, should have for them a good clover pasture. Hogs can be raised much cheaper and easier in a clover-field than in any other way; besides they fatten much quicker when taken from the clover field and fed on corn.

North Eastern Kansas holds out great inducements to those who intend engaging in the raising and management of cattle. This county, Nemaha, is largely prairie, the soil is a black sandy loam, very productive and capable of raising all

the grains and grasses usually grown in the North West. There is a great abundance of good stock water, and the large amount of unoccupied land furnishes plenty of rich pasture for over six months in the year, and hay of good quality to keep the cattle the remainder of the year. The very best quality of land can be had for five or six dollars per acre. Here we have a county free from debt, a jail (which cost $10,000) nearly always empty, plenty of good schools, no herd law, and free pasturage for the poor man's cow from the first of April to the first of November.

ANSON S. COOKE,

BELOIT, MITCHELL COUNTY.

Mixed Husbandry — Cost per Acre of Growing Winter Wheat, Oats, Corn, and Fruit — Management and Breeding of Hogs and Farm Horses — It Pays to Push all Young Stock as Fast as Good Food and Good Care Will Do It.

My farm is situated near the center of Mitchell Co., Kansas, on high, rolling prairie. A little over seven years ago it was unbroken sod, owned by the United States. It consists of 240 acres. One hundred and sixty acres of it are enclosed and subdivided by a hedge fence of Osage orange. I have 176 acres under cultivation, the remainder being wild meadow and pasture land. I have an orchard of 175 apple trees, most of them three years old. I have a peach orchard of 200 trees four years old, all of which is surrounded on the north, west, and south by wind-breaks of the same age, and all are growing well. The farm is conducted on the system of mixed husbandry, and is devoted to both grain and stock. I find from experience that it pays to use the best labor-saving machinery. I do most of my plowing with a three-horse sulky plow, as it enables me to stir the soil deeper, and covers the weeds better.

WHEAT.

Winter wheat has been one of the principal productions of my farm, as it does well in this latitude and brings quick

returns. My method is to plow the ground early in August, as this kills all the weeds, and is almost equal to a Summer fallow. It also allows the ground to settle with the aid of Summer rains, causing it to retain the moisture for the quick germination of the seed when sown. I harrow the ground thoroughly in September, when I put on the drill, sowing about one bushel to the acre, taking care to run the drills east and west, thus protecting the young plants from exposure by having their roots bared in dry and windy weather. The prevailing winds blow from the north and south. I cut the grain with a harvester, at a cost of one dollar and a quarter per acre. I stack as soon as the grain is properly cured, in medium-sized round stacks, as they settle more evenly, and stand high winds better than ricks. After waiting five or six weeks to sweat, I thresh and store, ready for market. Winter wheat ranges in yield from ten to thirty-five bushels per acre, but twenty bushels is a good average crop, and can be produced at a cost of about thirty-three cents per bushel, as shown by the following estimates:

Interest on land, at $15 per acre,	- -	$1.50
Cost of Seed,	" - -	1.00
" Plowing,	" - -	1.00
" Harrowing,	" - -	.45
" Harvesting,	" - -	1.25
" Stacking,	" - -	.50
" Threshing,	" - -	.80
Total, - - - - - -		$6.50

Divided by yield per acre, 20 bushels=32½ cents.

OATS

are the very best grain for horse feed during the Summer, or for young colts, and have always been one of the products of the farm. Forty bushels is about an average yield per acre, at a cost of about fourteen or fifteen cents per bushel, but I produce only in quantities to supply home needs. I have been most successful with oats sown upon stalk ground, the stalks and litter being first well plowed under, sowing them as

early as the 1st of April. I prefer to have them sown broadcast, and well cultivated in the ground.

CORN,

in the near future, will be our standard crop, and now stands second only to wheat. In the culture of corn we begin early in the Spring to prepare the ground. First, by cutting the stalks off the old stalk ground, then by plowing them under very deep, to enable the ground to withstand the drouths of Summer, by which we are sometimes affected. Before planting we thoroughly harrow the surface and mark off into rows of three feet eight inches in width, then plant with horse planter about the 5th to the 10th of May, dropping from two to four kernels in a hill. Before corn comes up harrow again, care being taken to keep the harrow clear of trash and clods. I find this last harrowing equal to once cultivating, besides making it so much easier to cultivate the first time. I go through the corn two or three times with cultivator, leaving the ground as nearly level as possible the last time. That is, not ridging up the rows. If this does not clean the corn, I have a boy go through it and pull up the remaining weeds. Our most troublesome weeds are the wild sunflower, cockle burr, and ragweed. The latter looks a little like wild sage. Corn yields from forty to seventy-five bushels to the acre. Some runs even as high as 100 bushels, but fifty bushels is a good average. Corn can be produced for about eleven cents per bushel, according to the following estimate:

Int. on land, per acre, - - - -	$1.50
Cost of Plowing, per acre, - - -	1.80
" Harrowing, " - - -	.45
" Cultivating, " - - -	1.00
" Gathering, at 2 cts. per bushel, -	1.00
Total, - - - - - -	$5.75

Divided by average crop, 50 bushels=11½ cents.

FRUIT.

As this country is new I am not able to give as full an account of results as I should like to. On our windy, bleak prairies

it is very essential to have belts of timber around our farm buildings and orchards for protection. Four years ago, in 1875, I planted belts of cottonwoods on the north, west, and south of my orchard, and in 1876, one year later, planted 125 apple trees, of about eight varieties. I have lost but three or four trees out of the number. I plowed the ground deep and set in rows twenty-five feet apart, and have cultivated well since. Twelve of the trees blossomed quite full in the Spring of 1879, and nearly matured quite a number of apples. The Summer of 1878 the trees made an average growth of two and one-half feet. The Summer of 1879, two feet.

The varieties planted are Summer, Early Harvest, Early June, Benoni, Winter Winesap, White Winter Pearmain, Ben Davis, King, Stark, Missouri Keeper, and Jonathan. All have grown well. In the Spring of 1875 I planted half a bushel of peach pits. The trees have made an excellent growth, and have borne fruit for two years.

Grafted fruits have done well, as also cherries, plums and pears. It has been my plan to cultivate all my trees and keep them free from weeds, as they grow much more thrifty. During a protracted drouth it is well to mulch with old hay. All small fruit, with the exception of currants, do well here. Grapes are a success, when properly managed.

STOCK.

My attention has been given mostly to the breeding of hogs and farm horses. After some experimenting I have settled upon the Poland China breed of hogs as best adapted to my purpose, owing to their large frame and early fattening qualities. I breed almost entirely from old sows, as they produce larger and better developed pigs, which seem to fatten and mature younger than pigs from young sows. Our brood sows are selected from the most perfectly developed young ones, choosing those of long and roomy frames, with square-set shoulders and hams, short noses, moderate-sized, drooping ears, and kind, docile dispositions. I keep only those which prove to be careful mothers. I try to produce two litters a

year; the first early in the Spring, and the second early in the Fall. Pigs should learn to eat early, as the mother soon fails to give sufficient nourishment; this they will easily learn to do if they can have access to a trough of milk, or swill, placed where they can not be disturbed. Pigs should be weaned at the age of three months, and never allowed to stop in growth; and at the age of eight months should weigh from two hundred to two hundred and fifty pounds. The boars should be of no kin to the brood sows, and should be of medium length, with well-developed hams and shoulders, very square built, docile in disposition. Hogs in the Spring should be allowed green feed for a short time, at least, and will not thrive without it. Brood sows should not be confined in a small pen. I find they do best if allowed to select and make their own bed, at farrowing time. For food to fatten hogs it pays to grind, and soak the meal until soft. Hogs in Summer should have shade, and in cold weather require good warm, dry shelter; without it they need at least one-third more feed. Our hogs give us no trouble about rooting, as a hog with all he wants to eat and drink is too lazy to root. The advantages of breeding two litters a year are these: First, one-half the sows produce the same number of pigs, or twice the number, breeding only once. Second, it gives you hogs to turn off in Fall and Spring, the two best marketing seasons of the year. Hogs can be fattened and sold for two and a half cents per pound at a fair profit.

HORSES.

Horses for farm use should be neither too light nor too heavy. I find that a horse weighing about eleven hundred or twelve hundred pounds, proves the most valuable for all work, as one much heavier is easily used up on the road, and one much lighter is not able to perform the heavy work required on the farm. I have been breeding from the Norman Clydesdale, and believe them to be well adapted to farm uses. The mare, while carrying the foal, should be allowed plenty of exercise, and not be put to straining or hard labor. I give

plenty of good wholesome food, such as oats and clear wild hay, but pasture is better. After the mare has had her colt, give her a week or ten days' rest, when she may be put to light work. As soon as the colt will eat, give it a small feed of clean oats when the mare is fed, and never allow it to stop in its growth. *It pays with all young animals to push their growth as fast as good food and good care will do it.*

LAND.

Mitchell county lies in the central part of the State of Kansas. The Solomon river runs through it from the northwest to the southeast, giving abundance of water power the year round. The surface of the country is divided into bottom lands and high rolling prairie; the streams are all bordered with timber, which, with economy, will be enough for fuel. Our people enjoy the benefits of the herd law, but are rapidly fencing their farms with Osage orange hedges, which do well here. Our soil and climate seem adapted to all kinds of grain and fruit produced in the center of the temperate zone. The soil is a rich loam, from two to four feet in depth, and the climate is decidedly healthy. The Winters are short and open, rarely having much snow or rain. Good water is abundant at a depth of from twelve to forty feet. There are many indications of coal, and it is mined to some extent already. Splendid building rock is found in abundance, and is to us what the forests have been to some of the older States. We have two competing railroads running to our county seat, Beloit, which is situated near the center of the county, giving us a very good market. Land in 1879 sold at from five to twenty-five dollars per acre. Here is a good place for a man with energy and small capital to secure a good home for himself and family.

W. S. GILE,

VENANGO, ELLSWORTH COUNTY.

Tree Culture as a Protection to Crops — Winter Wheat and Corn — The Latter the Best Crop — Sheep Interest Increasing — Climate.

VENANGO PARK FARM

is situated in the east end of the county, in the valley of the Smoky Hill river, fourteen miles east of Fort Hacker. It contains three hundred and twenty acres, two hundred and twenty of bottom and one hundred of upland, and is all prairie. When located (1872) it was entirely treeless. The bottom is sand and loam — upland sandy, on a clay subsoil, well watered, by springs, and in good pasture from the native grasses, blue stem and buffalo grass.

WIND-BREAKS.

It is one mile long, east and west, and has a double row of forest trees set around all that is broken. They are set two feet apart, and as fast as I break I intend to continue the setting of trees thus closely on the outside, as they will afford not only ornament, but a wind-break for the protection of growing crops. I set out the seedling cottonwood, box alder, coffee bean, white ash, black walnut, and honey locust. The cottonwood and the box alder are the surest to live, and are the most rapid growers of any tree I have tried. In front of and around my house, I have trees that I set from seedlings, that are thirty feet high and eight inches through, whose growth is only seven years.

WHEAT.

I have one hundred and thirty acres in cultivation. The land is well suited to the production of all the grains. Fall wheat usually produces twenty bushels to the acre on the bottom lands, and is generally a plump, well-filled berry.

The variety mostly raised here is Red May. I raised forty acres the year after the grasshopper raid, on corn stubble plowed in with a cultivator. It stood at harvest six feet two inches high, and yielded when threshed, thirty-four bushels to the acre. It sold on the farm for fifty cents per bushel. Since then I have raised but one crop—the price going so low that it does not pay the cost of production. Spring wheat in this locality has never paid; the same land in Fall wheat will yield four times as well as Spring wheat. Oats vary from twenty-five to seventy-five bushels per acre; barley about thirty.

Owing to altitude and the conditions of soil, we in central Kansas are experimental farmers. Old methods as practiced in the States east of the Mississippi, fail oftener with us than they do there. Eight years ago the larger part of the farmers here, coming from wheat-growing States, thought that it was impossible for us to make wheat a success. They plowed early, deep, and sowed broadcast, and covered with the harrow, sowing in August. This did not produce paying crops. The next trial was to plow later, and shallow, and sow in September. This plan worked a little better. Now the most successful wheat raisers commence plowing soon after harvest; they plow deep enough to cover the trash and weeds, and let the ground rest until near the 10th of September; then harrow, and sow from a bushel and a peck to one and one-half bushels to the acre with a drill.

The Fall of 1879 I sowed wheat with a drill after cutting and shocking the corn on the stubble, without even harrowing the ground. I commenced sowing the last day of September. I had a fine stand, and it has the appearance of having sufficient root to stand a Winter.

CORN.

Corn is the crop. In the valleys, if planted early and well looked after, it will produce from fifty to seventy-five bushels per acre. I plow early for corn, about ten inches deep. I plant in rows, four feet apart, harrowing after planting, and cultivating twice each way. In 1879 I had one hundred acres worked in this manner. The corn is sound, heavy and firm on the cob,

and my tenant places the entire crop at fifty bushels to the acre.

As to the

COST OF CULTIVATION

and production of crops in Kansas, I believe they can be produced with as little labor in this State as in any other State of the Union. One pair of horses and a man can plow and prepare the ground and 'tend thoroughly sixty acres of corn. One good team and man, having no hindrance, can work a farm of one hundred and twenty acres, half corn and half Fall wheat, by having help in harvesting each of the crops, and do it all in a good, farmer-like manner.

THE VALLEY

lands of this county are good enough to please the most fastidious land-seeker. The uplands are well watered, and of superior quality for pasturage. Grazers of large Southern and Western experience say that stock of all kinds put on flesh more rapidly here than either north, west, or south of us. More

SHEEP

have been brought into the uplands of the county the past two years than have been kept here previously. Merinos seem to be the favorite sheep, as they herd easier, are equally as healthy as the coarser wooled sheep, and produce more wool.

STOCK.

The improved Berkshire is the favorite hog for early market, and is a cheap and easy feeder. The light Western horse or pony is fast being superseded as a work horse by good, heavy draft horses, Norman Percheron stock being preferred by our best farmers.

A cross of the Short-Horn and native is looked upon with the most favor, and raisers of fine cattle seem to be as much divided here as in Illinois as to the merits of the Short-Horn and Hereford for beef.

Thus far in this county we can not claim success in the production of fruit. I have tried from foreign nurseries nearly

every kind of fruit, and in every case have failed. Not a single tree has lived out of over four hundred. I attribute the loss to the exposure of the roots of the tree to our severe winds while in transit. The only fruit trees I now have are those where the seed was planted where the tree was to remain. They are making a fine growth, and look as thrifty as one could wish. I have as fine seedling peaches, both in size and flavor, planted as above, as I ever tasted.

As yet none of the farmers in the east end of the county have attempted to produce any of the tame grapes.

The climate of central Kansas is good. Storms and cold snaps in the winter usually are of short duration. Our first frost in 1879 was on the 22d of October. I have frequently started the plow in February, and continued without hindrance from frost. I have sown wheat, barley and oats in March. I have broken prairie in November, February, March, April, May, June, and July, and so far as rotting of the sod or the production of crops is concerned, I have never been able to perceive that it made any difference in regard to what time of year the breaking was done; the only point being to have it well done.

WILLIAM L. CHALLIS,

ATCHISON, ATCHISON COUNTY.

Personal Reminiscences — No Grain Raised on the Farm — Clover the Principal Grass — Sheep Corrals — Cattle Barns — Piggery — Infirmary — Slaughter House — Advantages of Northern Kansas for Stock Raising.

WOODLAND FARM.

June 3d, 1856, I stepped from the deck of a Missouri river steamboat to the levee of Atchison, then a small territorial village, now a great commercial city, with its eight trunk lines of railroads radiating to every quarter of the continent.

I had been educated for a physician, and for years previously had ministered to the sick of Burlington county, New

Jersey, but the field was too small and could not compete with the great prospects then opening in Kansas.

It was not until 1857 that my agricultural experience began. I had bought of John Yocam — a genuine Pawpaw Missourian — a claim of one hundred and ninety-two acres adjoining the town site of Atchison, for $450, and put thereon an old German named Loui, who had been to me a kind of body-guard for years. His career was short, being called hence the same year, after an illness of only one day. This calamity made it necessary for me to take his place in person. My house was a primitive log cabin with mud roof, and without windows, into which I took my wife, the comfort of my life, and our two little girls, Ida and Bertha.

Now began my pastoral life, and without following in detail my many years of varied experiences and cares, I will simply say that from that purchase of a pre-emption right, a farm of seven hundred acres has arisen, with abundant timber to supply ten miles of plank and hedge fences. There are seven dwelling houses, barns for the storage of three hundred and fifty tons of hay; a slaughter house, wool house, piggery, blacksmith shop, etc., etc. Four hundred acres of this land is in tame grasses, and is now known as Woodland Farm.

REMINISCENCES.

Before describing the stock and appliances upon the farm, a few reminiscences of pioneer life may not be out of place. There were upon the claim ten acres broken, and ready for my first corn crop. But I must tell of the good fortune that came to us at that time. My old friend Jos. McCulley, shook off the sand and cobwebs of New Jersey and broke for the West. Joe was a good fellow, genial and smart, with a heart as big as an ox, but when things did not go to suit him, he was cross and irritable. But there was music in his soul, and Mrs. Challis, understanding his weakness, would, when crookedness struck him, sing "Rosalie, the Prairie Flower," which would always straighten him out. Now Joe knew more about planting corn than we did, and he was made leader. The ground

being prepared, the seed was dropped by my wife, whose hands were unused to such labor, while Joe and I covered the corn with hoes. The corn came up and grew finely. Then was cultivating time! My outfit for this arduous work was a little Spanish mule thirteen hands high, and a shovel plow—a genuine Missouri tool. Neither Joe nor I were much used to labor or to a June sun, and as we both had to work against the mule, we entered into a compact. Having erected an umbrella in the corner of the worm fence, we agreed to go a "bout" and rest in turn. This worked to our entire satisfaction, and certainly there was never a better crop of corn raised.

Soon after this, and just when we needed agricultural instruction, our friend Lew. Dubois turned his back on Jersey and came to us, bringing with him as a helpmate a little black-eyed Jersey girl. Lew. was a farmer without a fault, while his "Sally" was not a whit behind him.

From this time Woodland began to blossom. But there was one cloud in the domestic firmament. When we had company it was sure to rain and soak through the mud roof upon the snow-white damask cloth on the table, to the great disgust of the housewife. A new house became therefore a necessity. At that time mechanics could not be had, but Joe was a skilled workman, and with our help, in due time, a one and a half story cottage of some pretensions was erected.

In this work a very important factor was the wife, cheering us on while we applied the lumber and mortar. When at last it was finished, and the piano rolled into place, Joe was fully compensated for his long hours of toil by the housewife's cheerful songs.

After some ten years there came to us one Adoniram Judson Haskins, a dyed-in-the-wool Yankee, who, like his illustrious namesake, concluded that the heathen needed him, and struck for Kansas. There was no romance in his make-up, and no one would have had the audacity to pass "bass-wood hams" or "beech nutmegs" on *him!* Old Faithful, Honesty and Steady Habits combined, he has become a part and parcel of "Woodland Farm." He is to-day overseer of that farm,

and can daily be seen on his mare "Sadie" reviewing every department and lubricating its machinery.

AN ACCOUNT OF THE FARM.

This brings me down to the present time, and I will attempt an account of the farm in its various parts. White Clay creek and its north branch run through it, affording a constant supply of water; also the Central Branch of the Union Pacific, and the Atchison, Topeka and Santa Fe railroads. On the south part, and embracing about forty acres, is "Woodland Park." Here the Northern Kansas District Fair Association holds its annual meetings. It has a good half-mile track, a large barn, Floral Hall, Agricultural Hall, a piggery, shedding, etc., and is under the care of Col. T. S. Towne. It is a pleasant retreat, with ample shade and water, and is a popular resort.

The farm is subdivided into fields of various sizes, devoted to hay and grazing. No grain is raised now, and but little land is plowed, only about twenty-five acres, on which corn is sown for forage. In this way much less labor and machinery are required. Grain can be bought, but tame grasses and Winter pasture can not be obtained in quantities.

CLOVER IS OUR PRINCIPAL CROP,

and if it were not for the wet Junes and Julys we have had for two or three years past, I should be its strong advocate. Rain impairs its quality greatly, but if properly saved, it has no superior as Winter forage for cattle and sheep. My clover fields are grazed by sheep up to June, after which we cut two crops of hay, and the aftermath is always abundant for Winter use. The pastures proper are mostly in blue grass, which is saved for Winter feed. The prairie grass of the farm is cut for hay for the horses in Winter.

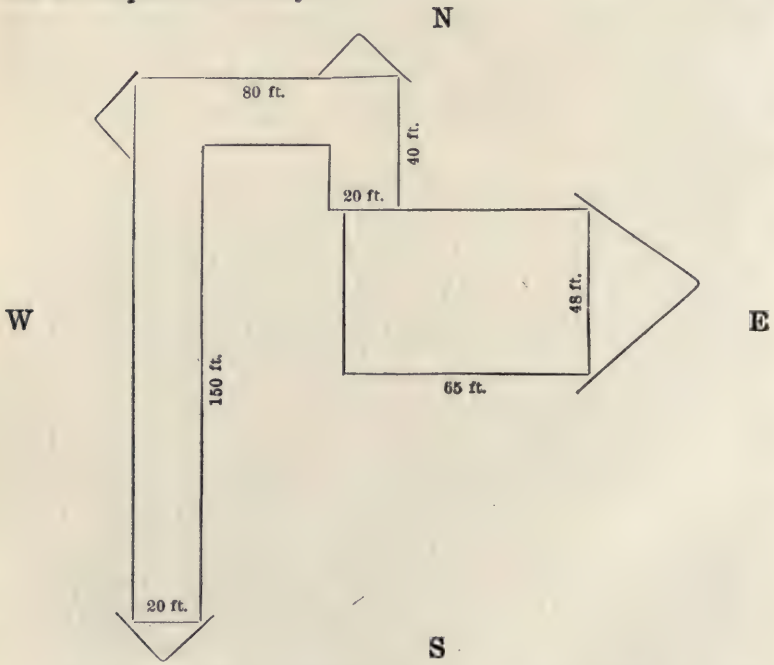
FARM LABOR.

On various parts of the farm are sundry dwelling houses, for the occupation of the workmen. I employ married men, furnishing them a house, firewood, and a garden spot. I pay them

twenty dollars per month. The labor of married men I find cheaper and more reliable than that of single men, who are here to-day and gone to-morrow.

THE FARM BUILDINGS

proper and the yards contiguous cover about ten acres, and are situated on the north branch of White Clay creek. The dwelling house has already been spoken of. The primitive barn, built in 1858, still stands. It is twenty by sixty feet, and is used for horses, the storage of tools, and workshop, and has an ample loft for hay.



Near this is a stone basement barn, forty by sixty-five feet, in which sixty head of cattle and horses can be stabled, leaving the upper stories for grain and hay. Adjoining this, on the northwest corner, is a hay and cattle barn, twenty feet wide, which runs north forty feet, west eighty feet, and south one hundred and fifty feet, forming a hollow square, which

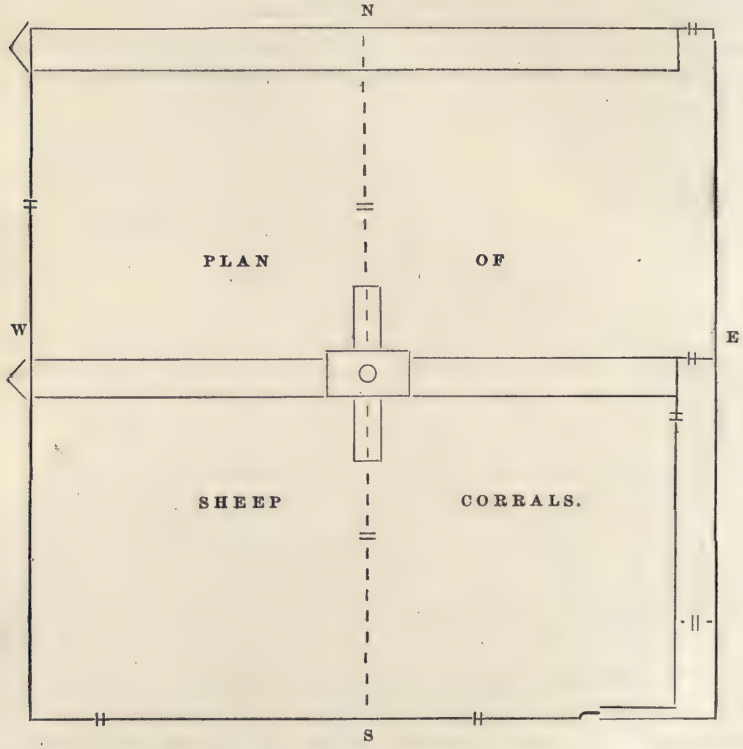
opens to the south. Underneath this the cattle receive their hay from above, in well-adjusted racks, with a box four feet wide in front, to catch their droppings. Thus neither man, cattle, nor hay are exposed to the weather.

The cattle pass in and out at will. In these lofts, which are fourteen by twenty feet wide and one hundred and ninety feet long, the hay is stored.

To the west of this is the stud-barn, 34x55 feet, in which the Fairbanks' scales are used in the purchase of grain and sale of stock; there is also a mill room, where formerly grain was ground by steam, but now only cob meal is made for the sheep and cattle. The north end of this building is a dwelling house occupied by the shepherd. In the south end are the quarters of the stallions and bulls, among which are "Newsy" and "Woodland," direct descendants of "Lexington," and victors in many hotly contested races. "Calhoun" by "Mambrino Chief" and "Ben Franklin" by "Whalebone Knox," are good trotters who will yet be heard from; and "Diligence" and "Diligence jr.," noble specimens of the French Norman are here also. Each horse has a box stall, with a lot attached, in which he has a free run when off duty. The upper story is filled with hay. Horse forks are used in handling the hay, in all these barns, and the fields are supplied with a tedder and loader. Contiguous to the stud-barn are the sheep folds, consisting of four corrals, each two hundred feet square, enclosed by a five foot picket fence, and covered on the north by tight-roof sheds, fourteen feet span.

All communicate by gates and lead to a yard used for catching, subdividing and counting, the egress from which is a narrow shute, fourteen inches wide and twelve feet long. The outlet is closed by a gate hinged in the center, and a little beyond the opening, so that as fast as they pass through the shute the shepherd can divide the sheep into two lots, without catching any of them. In the center, and where the four corners of the corrals join, there is a well, in which is a pump worked by an "Eclipse" windmill. The water is forced into a tank set under the fence which divides the two north corrals; the over-

flow goes into a similar tank to the south corrals, and in turn into a bucket hung in the well. The bucket when full shuts off the mill, and when it empties through a hole in the bottom,



the mill goes to work again. From two to three thousand sheep can be wintered here, and within that range our flock now numbers. Their shepherd is J. C. Smart, and well-named he is.

His sheep education was acquired in South Africa, where he was for six years under the tuition of English sheep growers. Returning to England, the hard times there caused him to come back to America for new and broader fields of operation. He will do well, and thousands more like him should follow.

GRAIN IS FED TO THE SHEEP

in troughs made of three fence planks fourteen feet long. In

dry weather the hay is scattered on the ground. I never feed in upright slatted racks, as more is wasted than consumed. If it is scarce, it is cut by horse-power and fed in boxes on runners, sixteen feet long, two feet wide, three feet high, with a trough on either side to feed from. Below is a cross section; these are hauled from place to place by a team, as they require filling.

South of the dwelling-house is the smoke-house, twelve feet square, blacksmith shop, twenty by twenty-five feet, the hennery, and the corn cribs. Not far off is the piggery, thirty feet by seventy-five feet, having twenty-two pens, six by twelve feet each, and a feed room, in which is an "Anderson Steamer" for cooking the food. This is as warm as a house, and as complete in all its apartments. The water is supplied underground from pumps at the barn. The tank is also used in dipping sheep, the dip being made by the same steamer. West of this is the infirmary, thirty-five feet by fifty feet, where the old ewes and the weaklings are cared for. This has three stories, two of which the animals occupy. The other contains their grain and hay. Near to this is the slaughter house, thirty feet by sixty feet, used also for the shearing and storage of wool. With the farm help, we can kill and hang one hundred hogs each day. The meat is salted in a room especially prepared for it in another building.

These various buildings and stock (except the sheep) are under the care of George Mitchell, who is Old Reliability itself, always on hand when needed, and never asleep or tired, so long as any of the stock require care.

Over all these, Judson reigns supreme, and the sheep dogs even would set up a howl if he were once missing from his daily rounds.

"Woodland" is a busy scene in Winter, but when Spring

grasses come, the stock is taken to "Woodlawn Farm," sixty miles west, in Nemaha county, where they stay and graze upon the Range, returning the next Fall. "Woodlawn" embraces six hundred and forty acres of good corn and hay land, has good timber and water, a large stock barn, four dwelling houses, and a mill run by a power Eclipse wind-engine to grind meal and feed. Plenty of hogs, cattle, colts, and horses are on the farm, all under the direct care and management of Mr. Tom Cardiff, a wide awake fellow, who stands in this country with scarcely a peer.

Northern Kansas is unsurpassed in agricultural wealth. Land is still very cheap, and fertile, and well adapted to the production of all kinds of grain and grasses. Stock raising is especially profitable, and there is a steady market at the farmer's door for all kinds of animals at good prices. If the thousands in the crowded cities of the East, who are barely subsisting, would avail themselves of this great heritage, what untold blessings would be bequeathed to their posterity.

ADAM HEATER,

HIGHLAND, DONIPHAN COUNTY.

What Has Been Accomplished in Two Years — The Buildings — The Fences — The Groves — Forty-Five Bushels of Winter Wheat Crop to the Acre — Each Day Its Own Task.

Without claiming the title of a Model Farmer, I am quite willing to contribute to your book, giving some of the methods by which I have achieved success upon the prairies of Kansas. In the Summer of 1871, I purchased a quarter section of land in Doniphan Co., Kan., on which there was a small house, the land being partly in cultivation. I left the farm in the hands of a tenant until the Spring of 1878, to work it as he saw fit, for a portion of the crop. In the meanwhile I paid no attention to it further than to receive, at the proper seasons, the rent. I mention these facts solely to show that, when I

came on the place in the Spring of 1878, the farm was, to all intents and purposes, no more than an open, raw prairie, and that I have built it up in the short space of less than two years, showing the capabilities and possibilities of our kindly Kansas climate and fertile Kansas soil.

My first work was given to remodeling the dwelling, so as to make it convenient for my family, while presenting a good appearance inside and out. The fences on the place were only outside boundaries, old and worn out. I put out 120 rods of hedge as a line fence between my neighbors and myself, and built 330 rods of five-board pine fence, using selected burr oak posts; also 250 rods of wire fence, with the same kind of posts, set sixteen feet apart, and using three strands of four barbed wire. I placed the posts for the wire fence at this distance apart, so that if at any time I wished to replace the wires with boards, I could do so by simply putting another post between each two already set, and using sixteen-feet boards.

The farm was a fractional quarter section, containing 163 acres. I divided it into twelve lots with the fences I have spoken of. One field contains 118 acres, on which I have now growing seventy-eight acres of Winter wheat, sown from the 15th to the 20th of September, 1879. Twenty acres are in meadow, and twenty acres are reserved for corn for the ensuing season. Another field is a twelve-acre pasture in the northeast corner of the place, on which was grown wheat in the year 1878. In the month of September, 1877, when the field was sown with wheat, I mixed timothy with the seed, at the rate of one and one-half bushels of the latter for every ten acres of ground. In March, 1878, I sowed the same field with clover seed, at the rate of one bushel for every ten acres. In the harvest of 1878 this crop of wheat was cut, and it averaged thirty-three bushels of wheat to the acre, full measure. This pasture the whole of the past Summer has furnished plenty of feed and range for five head of fine blooded cows, which have been pastured on it, and five head of horses. The sod is heavy and well set, and the grass is strong and thrifty.

West of this twelve-acre pasture and adjoining it, is an-

other field, containing eight acres. This was seeded in timothy in the Fall of 1878, at the time of sowing wheat, and again with clover in March, 1879, on the same conditions as the other tract referred to above. In the sowing season of 1878, I only sowed forty-seven and a quarter acres of Winter wheat myself, on the place. This included the eight-acre lot above spoken of, and thirty-nine acres and the fraction of the large lot immediately south of and adjoining it. All of the forty-seven and a quarter acres had been in corn the previous year. In the Summer of 1878, I Summer-fallowed it, harrowed and rolled it, and left it until about the 12th or 13th day of September, when I drilled it in wheat at the rate of one bushel and one peck to the acre. I cut it the two last days in June, and the first and second days of July, 1879, with a Buckeye reaper and binder, and the forty-seven and a quarter acres yielded me twenty-one hundred and thirty bushels of wheat, averaging forty-five bushels and five pounds of wheat to the acre. After the wheat was cut I had the crop removed from the field in order to give the clover and timothy full possession of the ground. The sod is now strong, and the grass is well set. I have nine head of horses and cattle pasturing in it now.

BUILDINGS.

The house stands six rods back from the main traveled county road, running east and west, on the south side of the road, facing north, in a lot containing twelve acres. The front yard is filled with shade trees, evergreen and deciduous, and well set in blue grass which I sowed in the Spring of 1878.

One lot is surrounded by a board fence ; this lot is about half an acre in extent, and is kept for stacking hay. It adjoins the feed lots on two sides, and the meadow on the third side. The other fenced lots are garden, feed lots for stock, barn-yards, etc., covering from one to three acres each.

On the place, and conveniently located to the house, I have built one wheat granary twelve by thirty-four feet, and ten feet high. I have a barn sixteen feet by thirty-two feet, used exclusively for a stable, with a hay loft in the upper story.

The corn house is twenty-five feet square and ten feet high. I have also a warehouse, twenty-five feet from the kitchen door, sixteen feet square, eight feet high; a meat-house sixteen by eighteen feet, ten feet high; an ice-house ten feet by twelve feet, eight feet deep from the surface of the ground. My smoke house is eight by nine feet, eight feet high. These buildings are all of pine, with pine-shingle roofs, and, with the exception of the corn crib and ice-house, are weather boarded with pine siding, and painted. The meat-house I was compelled to use this season to store wheat in.

For all of my work on the farm I use the best modern improved farming implements. With the design of storing them, I hauled from my timber tract, some three miles away, a sufficient quantity of posts to build a shelter. The larger ones were from ten to fifteen inches, mean diameter, and from twelve to eighteen feet in length. Of these I built the framework of a shed thirty feet wide by sixty feet long. The uprights I sunk four and a half feet in the ground. I left the tops forked, and strung heavy poles along from post to post, covering these, transversely, with lighter hickory, elm, oak, and other poles.

When I threshed I had the straw thrown over this structure. Thus, with no pecuniary outlay, and with my own labor, I have a warm, dry shelter for every farming implement used on my place, from a garden hoe to a reaper and binder. I may add that this building is only for temporary use, as in the coming season I have plans to build a bank barn forty by seventy.

FRUIT AND OTHER TREES.

In the lot west and south of the house, about four thousand budded and grafted fruit trees are growing, which comprise the best varieties of fruits common to our climate—apples, peaches, pears, apricots, cherries, and plums. I have one acre in small fruits, such as grapes trellised on posts and wired, currants, blackberries, raspberries, gooseberries and strawberries.

I planted in one lot of two acres in the Spring of 1878, several bushels of peach stones, which I had saved from the previous year. These I planted in rows seven feet apart, the

seeds about ten inches apart in the rows. I have now from these seeds, several thousand seedling peach trees in the grove, averaging at this writing about two inches in diameter. In the same Spring, with seed I procured from Ohio, I planted two hundred butternuts. These have now attained a handsome growth, are thriving in appearance, and take to the soil and climate well. They average about four feet in hight. I have also growing a grove of soft maples, about one thousand in number. These have attained a wonderful growth in girth and hight. I expect these trees in the near future to furnish all the fuel necessary for use. I have planted the peach trees so close together that they may acquire a straight, high growth before I thin them out. I grow them for the sake of the wood, and not for the fruit, though, when they begin to bear, I shall turn my hogs among them to consume it. By that time, the trees will have attained such a strong, firm growth, as not to be injured by the swine.

As rapidly as possible I shall change my farm from grain to grass, devoting it exclusively to breeding and raising fine cattle and hogs. Since my residence here I have been selling in the adjoining towns from twelve to twenty pounds of butter weekly, and eggs without number. I have made all the improvements from the income of the place itself. At no time have I taken capital or means derived from outside sources to add to the farm. By careful attention to the various seasons and their needs, by prudently husbanding our resources of labor and results, and having tasks for each day, without regard to weather, we hope to demonstrate that there is no safer, surer road to competence and comfort than by means of an average-sized Kansas farms.

THE INCOME.

It might not be amiss at this point, to speak of the income of the farm for the two seasons I have been myself in possession. In the year 1878 I raised as my share of the crop, 3,000 bushels of corn, of which I sold 2,000 bushels at twenty-six cents per bushel, bringing me $520. I sold $190 worth of

hogs, and 600 bushels of wheat at $1.00 per bushel, and $200 worth of sundry other products, making a cash income of $1,510 for the first year, besides retaining sufficient corn, wheat, and other farm products, for my own family use. As I had let out a part of the farm to neighbors to work on shares, my total outlay for hired labor for the year was less than $200, leaving me a net income of $1,310.

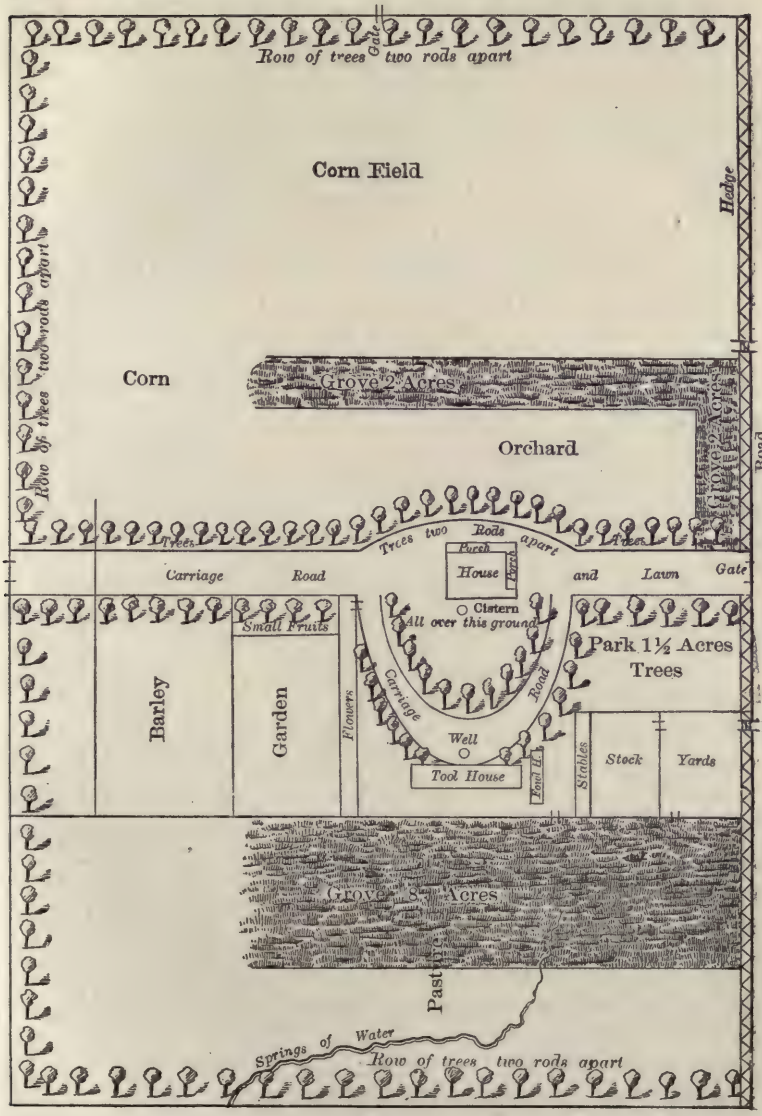
For the year 1879, with the 2,130 bushels of wheat which I raised myself, and the wheat paid me by renters, I have in my granaries 2,400 bushels of Fall wheat, worth at present market rates $2,400. I have sold already $200 worth of hogs, and have ready to sell thirty-four head, worth $200, making for this year an income of $2,800, not including butter, eggs, and other farm products disposed of, which of themselves add much toward the support of the family. Again I rented out on shares such part of the farm as myself and my son, a boy of seventeen years, could not work, and my expenses for labor were no greater than last year, leaving me a net income of $2,600, or double that of the first year. It may not be possible to increase the income from a farm each succeeding year at a like rate; but by a careful study of improved methods, by a comparison of the experiences of intelligent farmers who take pride in their profession, and by adapting and using every known process to increase the yield of land, and improve the soil, the product of my labors for the past year can always be equaled if not surpassed. I have profited by my own experience, and I believe that I shall be rewarded by still greater results.

JOHN HODGINS,

CENTRALIA, NEMAHA COUNTY.

Took Horace Greeley's Advice — Adventure with The Indians — Seven Thousand Trees — Beautiful Grove and Park — Method of Tree Culture — Corn the Best Crop — Raising Poultry Profitable.

Raised a farmer on land worth one hundred dollars an acre, in 1860 the writer was one of the landless young men of Eastern New York, to whom the honored Greeley tendered the advice, "Go West, young man, and procure land for a home." Acting upon this advice I came here, and made a selection near the center of Nemaha county, Kansas, then a trackless wild, with only a few settlers on timbered claims along the streams. The same Spring I broke fifteen acres and planted it to sod corn, and one acre, which was a mellow spot, to potatoes and garden stuff. Crops were a total failure that year, as we had only one light shower from April until September. I will relate an incident which happened to me at that time. I was working in my potato patch with my head down, hoeing a few potatoes about as large as almonds, when I was startled by a most unearthly whoop. On raising my head I saw forty Indians riding in a semi-circle toward me, with over a hundred more in the background. They were dressed in buckskin and bright colored blankets, and being unused to the sight of Indians, I knew not what tactics to pursue. I looked at the house, which contained my young wife and child, like Scott's chieftain looking at the sun before his battle with King James, as a sight he might never more see. I walked up to the leader, raised my hat and bowed as I would to an Eastern Nabob, and as I extended my hand, he smiled, and we shook hands like old friends. I showed him my potatoes. He laughed and told me in plain English that he was over forty years old and that


Row of trees two rods apart
Gate
Corn Field
Hedge
Corn
Grove 2 Acres
Grove 3 Acres
Orchard
Road
Row of trees two rods apart
Trees two Rods apart
Carriage Road
Porch
House
Horse
and Lawn
Gate
Cistern
All over this ground
Small Fruits
Barley
Garden
Flowers
Carriage Road
Park 1½ Acres
Trees
Well
Tool House
Coal &c.
Stables
Stock Yards
Grove 5 Acres
Pasture
Springs of Water
Row of trees two rods apart

he never saw so dry a year before. They were Pottawattomies, returning from a buffalo hunt, laden with dried meats.

IMPROVEMENT.

The next year was a good one, and I laid out my farm, like the plat, and commenced planting trees. Every farm house should stand three hundred feet or more from the public road. Mine is thirty rods, and every person making a home should plant groves and orchards around his dwelling. Strangers often call at my place and almost invariably say to me "you have a beautiful home." This affords some of the pleasure we need to cheer us on in the pathway of life, for it is true that, *Omne tulit punctum qui miscuit utile dulci.* My groves and park contain seven thousand trees, and include the following varieties: Red elm, white elm, ash, yellow cottonwood, white cottonwood, hackberry, tamarack, Lombardy poplar, white maple, sugar maple, coffee nut, black walnut, red oak, rock oak, box elder, honey locust, red locust, wild cherry, thorn apple, silver aspen, magnolia, red-bud, buckeye, ailanthus, catalpa, wahoo tulip, willow, sycamore, Osage orange, Norway pine, Norway spruce, Austrian pine and red cedar. My park contains some fine roses and flowering shrubs; the majority of the trees are from fifteen to thirty feet high. My orchard contains five hundred apple trees, mostly bearing; also one hundred peach trees, seventy-five cherry trees, a few pear and plum trees. My home can be seen from some directions the distance of twenty-five miles. The altitude of this farm, and also the general altitude of this county is two thousand five hundred feet above the level of the sea. The chemical analysis of the soil in its properties as plant food will compare favorably with any other portion of our country, and is as follows: In one hundred parts of average soil taken from upland and valley, lime eight parts; magnesia two; oxide of iron two; silica fifty-two; potassa two; alumina ten; phosphoric acid three; organic matter sixteen; soda, sulphuric acid and nitric acid five. Some author has told us that order was the first law of heaven, and we see with what perfect order nature works

around us, and in this, the noblest and best occupation on earth, farming, we should adopt system and order in our operations.

CROPS.

I practice rotation of crops; follow corn with small grain, and Summer fallow every third or fourth year. I save all the manure, and put it on the land. I have raised all the crops usually grown in this latitude. The corn crop pays the best. In 1865 I was appointed correspondent for the United States Department of Agriculture by Commissioner Newton, and am still continued to this date. I have received seeds of all the improved cereals and vegetables, also grass, trees, potatoes and artichokes, and have carefully tested them, and sent them abroad over the county. The Department is doing a good work, notwithstanding the slurs thrown upon it by many newspapers. It should receive more liberal help from Congress.

STOCK.

I feed all my grain to cattle, hogs, horses, and fowls. I am familiar with many of the popular breeds of cattle and hogs, but prefer the Durham cattle for beeves, and the Ayrshires for milk and butter. A cross between the Berkshire and Poland China hogs gives good results. If hogs are to be kept over one year, get Poland China, if they are to be killed at one year or under, the Berkshires are the best.

METHODS.

My plan with cattle is to select smooth, straight, thrifty native cows, regardless of their milking qualities, and cross with a Durham bull. This makes the most profitable grade of cattle for a small outlay of money. I keep about forty head of cattle, seven or eight horses, and a few hogs. My children raise from four hundred to seven hundred fowls every year. I have a large rack in my stock yard, and keep it filled with hay or straw. The cattle will eat night and day. I give my domestic animals all the salt they want the year around. I raised twelve tons of Mangel Wurtzels one year, and thought they were a paying crop, even in this land of corn. I milk from twelve to fifteen of our best cows,

and make butter. For many years past I have received three or four cents above the market price per pound for our butter. The milk is set in tin pans in a cool cellar, and nothing is allowed in the cellar that has the slightest odor. Skim milk as soon as it changes. I have a tin cooler for the cream, and cool it to sixty-two degrees, then churn it. Work it over. Add one and a quarter ounces of dairy salt to one pound of butter. I work in the salt and do not put any water on it. I let some calves suck the cow. Generally the calves which I raise on sour milk make as good yearlings as the others. Calves must be fed some grain or roots, or both, in addition to good hay, during the first Winter, in order to keep them growing, and to make thrifty cattle. If any of my stock becomes infected with lice, I wash the parts most troubled with water that potatoes have been boiled in. The lice will soon disappear. Black leg in cattle can be cured by bleeding them in the hind feet. Cut a perpendicular gash on the side of the heel between the hoof and the dew claws, and rub down the animal's leg until the blood starts freely. If this is done before the disease is far advanced, it will save the animal.

HORSES.

When my brood mares are taken from the grass into Winter quarters, I feed them a liberal mess of carrots, potatoes, or cabbages, once a day, and a moderate mess of grain twice a day; also give a teaspoonful of soda twice a week. Wean the colts at seven months old; a month earlier if the mares work. Handle them very patiently and gently, and break them to the halter. Never let them break loose after once haltered, for here the education of the horse begins. It is wonderful the number of young horses that are spoiled by bad treatment. Brother farmers, exercise patience, kindness and judgment towards all animals, and yourselves, they, and the world will be better for it.

POULTRY.

Raising fowls is good employment for children if superintended by older heads. I raise large numbers, and have never

lost any by disease. The Black Spanish are the best layers. The Brahmas make the heaviest birds, but all things considered I prefer the common dung-hill fowls, and these may be very much improved by judicious management, as well as may all other live stock.

Give the chickens clean quarters, plenty of grain, and wood ashes or sand to roll in. Coal, gravel, burned bones, and plenty of fresh, cool, clean water, with a grass run are necessary to health. Select the first laid and largest eggs for hatching, and sprinkle a teaspoonful of sulphur over the eggs when put in the nest to hatch. Feed the chicks when ten hours old, dry, coarse Indian meal. When one week old and afterwards, feed them in addition to the meal, thick sour milk.

FRUIT TREES.

My method of raising fruit trees is as follows: I prefer low heads, trimmed into shape when small, and never much afterwards. Wash the trees twice a year with soap, reduced to the consistency of paint with water, and three pounds of sulphur stirred into four gallons of the liquid. Follow this for ten years. Cultivate, but do not crop the ground; when the trees first blossom, manure the ground and seed it down to grass.

R. L. GILBERT,

CHESTER, JEFFERSON COUNTY.

Delaware Reserve — Stock — Care and Feed of Sheep — Fruit.

The eastern part of Jefferson county, Kan., is rough and broken. A quarter section, one hundred and sixty acres, that can all be broken and cultivated, is rare. But there are from thirty to fifty acres in nearly every eighty, that is good farming land. We can grow good crops of wheat and corn. Wheat yields

on an average from fifteen to thirty bushels per acre, and corn from twenty-five to eighty bushels per acre. The bottom lands are best adapted to wheat, although good crops are sometimes raised on the prairies. The farmers in this vicinity raise mostly hogs and cattle. Some raise nothing but corn and haul it away to the nearest market, but such farmers scarcely make a living.

FARMS.

Plenty of farms can be found here for sale. The great drawback of this country is the money-lender and his exorbitant per cent. This Delaware reserve was opened for settlement about fifteen years ago. Land purchased of the railroad company cost from three to six dollars per acre, on time. Men of small means were doing very well, and were building, clearing and fencing, each year adding a few more acres to their farms, when the drouth and grasshoppers in 1874 and 1875 came. A little money was borrowed to help them pull through, but the times got worse, crops were poor, and the little money borrowed soon became a great deal. The mortgage was foreclosed, the place taken for a few hundred dollars, and the owner started for other lands, poorer than when he came here. The result of this is, that most of the farms are owned by speculators. Renters live on them, and no improvements are made. They are offered for sale, and can be bought cheap; therefore there are very few good buildings on any of them.

STOCK.

We are trying to improve our common cattle by crossing with the thorough-bred Short-Horn bulls. There is plenty of range yet for cattle on the prairies, but the bottom lands are most all fenced up. Our choice of hogs is the Berkshire and also the Poland China.

SHEEP.

I concluded three years ago, that I would try raising a few sheep. I bought seven. I took good care of them the first Winter,

and they had three lambs in the Spring. I next bought a thorough-bred Cotswold buck. Last Spring I sheared from a ewe lamb ten pounds of nice wool about nine inches in length. I have at the present time sixteen head of half-breeds, which will, I think, shear next Spring on an average, nine pounds. Some of them are now larger than the old ewes. For mutton and wool I think the cross I am making, for this country, unexcelled by any other. My sheep all appear to be healthy. Occasionally in the Summer, after much rain has fallen, they have a cough and a running at the nose, but they soon recover. I have lost but three in three years, and two of them died of old age. The other died from an overflow of the gall, as it was too fat.

The greatest foe to sheep here are the dogs. While every farmer has from one to six dogs, there are but three in a township four and a half miles wide by seven miles long, who keep any sheep. So we have to watch all those dogs, and are obliged to shut our sheep up nights in a lot which is twelve rails high. I have open sheds for them to run under as they please, and the woods afford pasture for their range in Summer. After wheat is harvested I turn them in on the stubble, where they run from two to three months. I am now trying to get my pasture seeded to blue grass, but have not as yet made much of a start in that direction.

CARE AND FEED OF SHEEP.

In the Winter I feed corn fodder with the corn on, once a day, and provide all the corn fodder they can eat at night. I sometimes feed a few sheaf oats, and they have straw to eat when they want it, also have access to water. My lambs begin to come about the first of February. I separate the young lambs and ewes till they get strong. I feed each ewe bran twice a day, with oats added, and they seem to grow steadily, and by the time that grass begins to appear, they are large enough to turn out and go to eating. By the next Winter they go through like an old sheep. I have now thirty-nine in my flock. I intend keeping about fifty ewes, and shall sell off all

the poor and old ones to the butcher. I hope to have in a few years a flock as good as the best of sheep-raisers.

FRUIT.

Fourteen years ago I planted an orchard of one hundred apple trees in the bottom of a small creek running through the farm. The trees seemed to grow very well, but I have only gathered one crop of fruit from that orchard. Ten years ago I selected a location on the prairie, just above a limestone ledge of rocks sloping to the northwest, and have now over seven hundred trees. About half of them have borne well for the last three years. The two great pests of the orchard are the borer and the rabbit. The former I keep down by constant watching. I always carry a sharp knife along, and whenever I see him at work I cut him out at once. I have lost but a few trees, but have seen whole orchards entirely destroyed by them in a few years where they have been allowed to work. The only certain plan with the rabbit is to bind the trees up with corn stalks or paper.

APPLES — VARIETIES.

I plant my trees eighteen feet apart each way and cultivate both ways. Every year I plant with corn or potatoes. I do not favor sowing small grain in an orchard, as it seems to stunt the trees. Part of this I have seeded to clover, and have a good stand. Next Spring I intend to seed down the rest, as the trees are getting too large to plough through.

After twenty-four years' residence in the State, I find the climate favorable for apples. The Early Harvest, Sweet June, and Red June, answer best for early apples; for Fall, the Maiden Blush and Rambo; for early Winter, Jonathan (one of the best apples ever grown); and for the Winter, the Winesap, Ben. Davis, Willow Twig, and Jenniton, are admirable. The great mistake which new beginners in the fruit line make is, that they plant too many varieties. For blackberries we have the Kittatinny and the Wilson. Last Winter these were killed to the snow line. I shall next try the Snyder.

EZRA CRANE,

STAFFORD, STAFFORD COUNTY.

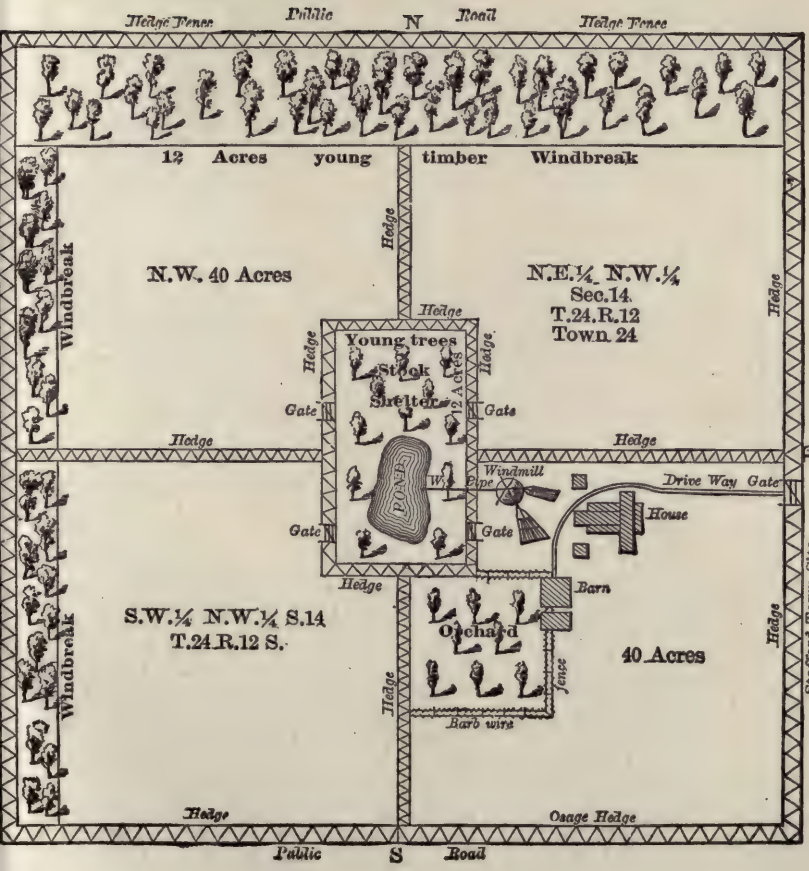
Feeding — Corn — Clod-Crusher — Plans — Potatoes — Wheat — Hogs.

My farm joins the town of Stafford and embraces one hundred and sixty acres, all under cultivation. The soil is a black, sandy loam, six and one-half feet in depth, underlaid with a subsoil which is a mixture of gypsum, sand, and grayish-brown clay extending to water, which is found at a depth of twenty feet in sand and gravel. Having had nearly eleven years' experience in farming and stock-raising in Kansas, I think I pretty thoroughly understand what is required to make either or both a success. I have found that the two occupations are more remunerative when combined than either one can be made separately. Every well managed farm can be made to support quite a herd of cattle, sheep, and horses, by simply utilizing the corn stalks, straw, etc., that would otherwise go to waste, with the addition of a trifling quantity of roots, pumpkins, and millet. Although corn and wheat are the crops chiefly relied on to make money in Kansas, I find it the best policy to supplement them with a few acres of potatoes, beans, Mexican peas, peanuts, sorghum, and rice corn, which require no more cultivation than that usually given Indian corn. Potatoes should always be boiled for hogs or milch cows; when given to milch cows, they should be salted slightly, and a small quantity of meal added to the first three or four messes, or till the animal has cultivated an appetite for them. As a laxative and appetizing food for work horses, which are kept much in the stable or have not an opportunity to graze, or for debilitated, over-worked, fevered and constipated animals, they are excellent. The only objection is, that it requires some patience and perseverance to teach a horse to eat them,

though the same may be said in regard to feeding pumpkins, peas, and the different roots; but nothing will pay better, when we come to count the skeletons of the horses that have died prematurely from being fed continually on corn and hay. Thousands die when they should have really but reached their prime of life, and tens of thousands more are stiffened, diseased, and rendered almost worthless. Corn is good when fed in connection with plenty of roots and green forage. It should always be soaked at least twenty-four hours, as this destroys much of its fiery nature. Now for some of my methods.

CORN.

For corn, I plow my ground in the Fall (if it can possibly be done), from seven to ten inches deep, leaving the ground rather rough. In the Spring, say the first of April here in Kansas, I run my granger harrow or drag over it, smoothing it down perfectly level. I then plant in rows four feet apart each way, and cultivate three or four times with cultivator, laying it by before the tassel appears. If, after the tassel appears, the hot, dry winds set in, and every thing indicates a protracted drouth, I muster all the old ground or common two-horse stirring plows I can find (the ordinary one-horse bar plow will do if one has plenty of them), hitch a large, heavy horse to each, and bank up a regular sweet potato ridge to each row of corn. This extra coat of dirt acts as a mulch and protection to the roots and brace roots, and corn treated this way will remain green and ear well in this State, while that which has been cultivated perfectly level, will fire and perish. I raised an average corn crop, of excellent quality, in 1874, when all my neighbors failed. How this would work in other States I am unable to say. My harrow or clod crusher, mentioned above, is made after the following manner: Take three 4x4 scantling six feet long, slope off the front ends like the runners of a sled, then begin at the rear end and nail on common fence plank seven feet long, lapping them one and a half inches after the manner of siding a house; bore a hole in the center timber and attach a clevis; then spike on an up-


Hedge Fence
Public
N
Road
Hedge Fence
12 Acres young timber Windbreak
Windbreak
N.W. 40 Acres
Hedge
N.E.¼ N.W.¼
Sec.14.
T.24.R.12
Town 24
Hedge
Young trees
Stock
Shelter
12 Acres
Hedge
Hedge
Gate
Gate
Hedge
Hedge
E
Windmill
Pipe
Drive Way Gate
POND
House
Gate
Gate
Barn
Hedge
S.W.¼ N.W.¼ S.14
T.24.R.12 S.
Orchard
40 Acres
Hedge
Stafford Town Site
Windbreak
Hedge
Fence
Barb wire
Hedge
Osage Hedge
Public
S
Road

right piece eighteen inches long to each scantling, and spike a board on top, and you have the right size for two heavy horses. If you want one for three or four horses, make it proportionately large. This apparatus will far excel an ordinary roller if the clods are very dry and hard, and no man who has ever tried it will be without one.

POTATOES.

For potatoes I plow the ground, if possible, in the Fall, the same as I would for corn, and then again in the Spring. I plow as deeply as a common plow can be made to run. I cut my seed very small, one eye in a piece, and plant in drills three feet apart, the pieces twelve inches apart in the drill. I cover with two-horse plow, turning them under seven inches deep, and cultivate once a week till the blossoms appear. I have raised peachblow potatoes weighing two and one-half pounds in this manner. Should too many sprouts or too many side vines appear, it is of most vital importance to pull them out.

WHEAT.

For wheat I plow as soon after harvest as possible, stirring the ground to a depth of six to eight inches. Deeper than that is unnecessary if not positively injurious, as the wheat in this country must positively have a hard bottom on which to root. This fact has been pretty well established in Kansas since 1874. I have at the present time one hundred and eighty acres of growing wheat, of which fifty-five are Mediterranean, five are Fultz, and the remainder Red May. These varieties succeed best here. I am satisfied that it is very necessary to thoroughly pulverize the ground for wheat, as well as for any other crop. No growing crop obtains aliment from clods. I place a few dozen bricks in my wheat bins to absorb all moisture.

HOGS.

I give you the plan of one of my farms, also my plan for hog pens and my views concerning the care of swine. I floor all my pens, roofing one-half and letting the other half be open to sunshine, for hogs will neither grow nor fatten in a

dark place. I do not allow the hog to eat his own excrement, nor to inhale the stench arising from it. I clean all pens regularly, giving plenty of bedding and changing it often in cold weather. I do not crowd too many in one pen when fattening. I cook all food, if possible, for I am satisfied that sixty pounds of cooked or scalded meal are equal to (that is, will make as much pork as) one hundred pounds of raw corn. All hogs should have an abundance of salt. I am well convinced that no hog will ever have cholera if he has as much salt as he requires. Any one observing the above rules will seldom have a sick animal, or one that will fail to fatten. Sows heavy with pig, should have a separate pen, and in size eight feet square. Spike a 2x4 scantling all around on the inside of pen ten inches from the floor and the same distance from the wall. This will give the pigs a chance at birth to escape overlaying. For watering I prefer a continuous stream running through a succession of 6x10 inch troughs; the pens running in a row any desired length. Twelve dollars will furnish lumber and iron with which any common farmer can make a mill that will work a common well pump, which will furnish water for five hundred hogs. For stock hogs running in a pasture, it is advisable to keep a barrel or box of rock salt standing where the brine will leach and saturate the earth for several feet around. Hogs will lick this brine and earth, but will seldom eat salt in bulk, as cattle will. I consider this an infallible preventive of cholera. I never had a hog take that disease, although it has slain its hundreds around me.

GEORGE S. FUNK,

RICHLAND, HARVEY COUNTY.

Makes Butter — Finds it Profitable — Prefers Graded Cows — Alternates Grain with Stock.

My farm is situated in Richland township, Harvey county, Kan. Three quarters of a section are occupied. The reason I selected it in this shape was, that I might obtain running water on each eighty acre tract, which is quite a convenience in mixed husbandry.

OUT-BUILDINGS.

My buildings are located quite near to a spring stream; in fact, it runs through the barn-yard, which is a great advantage in watering stock. The buildings are composed of a house twenty-four by sixteen, with a kitchen sixteen by sixteen, a barn thirty-eight by thirty-eight, built expressly for the shelter of stock, and arranged conveniently for that purpose. In extreme cold weather I have comfortably stabled thirty-five head of cattle and ten head of horses. My granaries, corn cribs, hog pens, etc., are as yet but temporary.

HEDGE FENCES.

I have the whole farm enclosed with a hedge fence, and divided into fields convenient for grain-raising and pasture at the same time. I have two hundred acres under cultivation, and the remainder is fenced separately for pasture, and has running water and plenty of timber for shelter in Winter, and shade in Summer.

BUTTER.

I have given the subject of butter-making the greater portion of my time and attention. My plan of operations is: To keep from ten to fifteen cows, always selecting from the herd the best butter makers, and allowing those which I consider inferior to raise their calves. I have averaged during the last

four years twenty-two hundred pounds of butter per year from twelve cows. For this butter I realized twenty-one and one-half cents per pound.

Butter making is profitable at twenty cents per pound in this Western country, where feed is plenty and cheap.

GRADED COWS.

We keep graded cows, and try to improve the stock by breeding from a thorough-bred bull. In making butter I have an advantage over cheese makers, by having the milk to raise my calves on.

A CELLAR ESSENTIAL.

I find the best and cheapest mode of creaming the milk is to have a good cellar in the first place. I use the six quart pressed tin pan, instead of the earthen crock. It is better than the crock, as it affords less depth and more surface, in order to get more cream, or all the butter, out of the milk.

GRAIN AND STOCK.

Experience and observation since I have been in Kansas demonstrate to me clearly that the man who comes here with the full determination of making himself a home, one that he can hand down to his children, and brings his mental faculties into use as well as his muscle, will succeed best by mixing his grain-raising with hogs, cattle, sheep, and horses. Here lies the profit to a great extent. With corn at twenty cents and hogs at four dollars per hundred pounds, there is certainly money to be made.

Our land is adapted to the raising of all the staple products. Corn will average sixty bushels per acre, oats fifty bushels, wheat twenty-five bushels, barley and rye the same. Irish and sweet potatoes grow abundantly here. The surface of the country is a beautiful rolling prairie, with ample natural drainage.

ENOCH W. POOR,

MYRTLE, PHILLIPS COUNTY.

Started only with Brains—Yoke of Texas Steers—Sod Barn—Cut Millet Recommended as Excellent Food for Young Hogs.

Myrtle is of itself but a cross-roads post office, in the very northerly center of Phillips county, Kansas, only one and a half miles from the State line between Nebraska and Kansas. It is really in the Great Republican valley, being but seven miles from Republican city, the largest village and market in Harlan county, and situated on the Republican Valley railroad, while it is sixteen and a half miles from Phillipsburg, the county-seat of Phillips county. Our soil is a light, deep loam, containing sand enough to keep it dry and warm, and lime enough to make it extremely fertile. Walnut creek, a small stream fed by living springs, runs across the west forty acres of the farm, affording splendid water for all stock purposes, while wood enough grows on the banks to afford fuel, all that is or will be needed for years to come.

In 1873 we landed here, my wife, three children and myself, with no team, no stock, no farming tools, but a solitary two dollar bill for a capital with which to begin farming. No, I will not put it that way, as both my wife and myself had a large capital of Old Granite State yankee brains and muscle to begin with; in fact, though without money, we were chuck full of day's work, which we made available the first year as we had no team to use. However, by dint of cutting hay with a hand scythe, and wood with a hand axe, by the next Spring (1874), I had captured a yoke of Texas steers, a yoke chain and breaking plow. With these I began breaking sod, and by the last day of June, had twenty-five acres of sod corn all up and looking well, together with a good kitchen garden, so that we flattered ourselves that we were

well started. We had also managed to procure a good cow, a hog, and a few hens. But man proposes while God alone disposes, and the twenty-fifth day of July, a gentleman arrived in company with his wife, "his cousins, and his aunts." I refer to G. Hopper, Esq., (now well known in all of the northwestern States). He paid us but a flying visit, staying only three days. But that was long enough, as when he left only from two to three feet of bare corn stalks were all we could see of our twenty-five acres of corn, while our garden, though "lost to sight was yet to memory dear." This was slightly aggravating, but worse, every neighbor within one hundred miles was served the same. In fact, this year he took all but our courage, which at that time, would hardly pan over one-half ounce to the bucket. About this time, my wife and I took account of stock, and wrote on the leaves of the year's record, "Busted," and commenced again on money sent us by kind friends in the East, which, used prudently, lasted us for a year, when as a family we again became self-supporting. Since then we have each year raised a crop, though not always up to the average, and we have done well. To-day we have a deed of one hundred and sixty acres of land, and another one hundred and sixty almost ready to deed as a timber claim, which will make three hundred and twenty in all. I have one hundred and twenty-five acres under cultivation, which will be in crop this year (1880) as follows: Sixty acres in corn, thirty-five in wheat, ten in barley, five in rye, ten in grass, millet, and five in sorghum, potatoes and truck.

SOD CORRAL.

My farming would be called mixed husbandry, as we devote attention to horses, cattle, hogs, and grain. Horses I am not improving as I ought. For cattle, I have only native cows, but Rome was not built in a day, and I look forward to the near future, when an infusion of Short-Horn blood will give us some fine grade steers, costing no more to keep and paying a much larger profit. In the Summer, which is here eight months of the year, I herd on the broad prairies, costing not

over twenty-five cents per head a month, for a herder. For their Winter comfort, I built a sod corral, or as we call it here, a Kansas barn, built on my own plan. The north side of the lot was enclosed by a sod wall seventy feet long, six feet in hight, with wings on each end, forty feet long. Running south of them, seven feet from the wall on the inside, I set crutches, eight feet out of the ground, covered with poles two feet apart, and over these a coating of swamp willows, hay and sod, making in all one hundred and fifty feet of good shedding, very warm, being only open to the south. The north side being good strong fence, feed racks are placed inside against it. This barn only cost seventeen days work of two men and ten days of team.

I feed native hay, corn-fodder and millet alternate. No grain, except to fresh milch cows. For my horses I have Kansas barns, that is, sod walls all around, covered on the roof the same as the corral.

HOGS.

I have paid more attention to hogs than to cattle, as good breeds could be obtained at a less outlay for first cost, and our emigrant pork market has been excellent, with good prices.

I now raise as the best suited and most profitable in this country, a cross of Berkshire and Poland China, with a slight mixture of old native to bring hardiness and strength. I raise about one hundred and fifty pigs a year, selling the larger half to the home market as stockers, and feeding the balance. I get the finest and best pigs from sows one and one-half to three years old, with boars not over one and one-half years. I have pens built of logs, all in a row, connecting with each other by trap doors. I find millet cut in the seed to be an excellent feed for stockers. Pigs from four months old up, eat it with great relish, and with one feed of corn per day I think they do better and grow faster than when fed on corn alone. For fatting hogs, I think as we have a mill handy, that wheat, rye, barley, and corn, equal parts, ground coarse and fed dry, give the best results for the least money, laying on flesh and lard very fast,

and keeping them more healthy than when fed on corn alone. I have never had a case of cholera, or lost a hog from disease, in four years.

In hens my wife has settled on a cross of game and native, as the best layers and raising the most hardy chickens.

RESULTS.

In conclusion I would say: As a family, we have emerged from our dug-out, and are living to-day in a log house, thirty-four by sixteen, with frame ell, ten by fourteen, divided into three rooms, seven feet high; shingle roof and pine floors. We have good schools, and while our boys are fitting in the three R's for life's duties, our girls have the ambition of every Yankee lass, to become schoolma'ams. My farm will fetch in market to-day, $2,000 cash. In what other business, with no capital (a family of three children, the oldest but ten years of age), could we have done as well? I have no axe to grind, no land to sell. But to those who have nothing in the East, as I had, I give my experience, which is also the experience of seven out of ten around me, and will close by saying, Come and do likewise.

JESSE L. SHORE,

CAMDEN, MORRIS COUNTY.

Location of Farm — Horse and Cattle Yard — Wheat — How much Seed to Sow — Cost of Raising it — What Stock to Keep.

THE FARM.

My farm lies twelve miles southeast of Junction City, Kansas, and contains three hundred and twenty acres, of which two hundred and fifty are in cultivation. Wheat is the principal crop raised. Wheat and cattle are the paying industries. Two hundred acres are planted in wheat, and fifty acres in corn and other crops. I have on hand at present seven head of

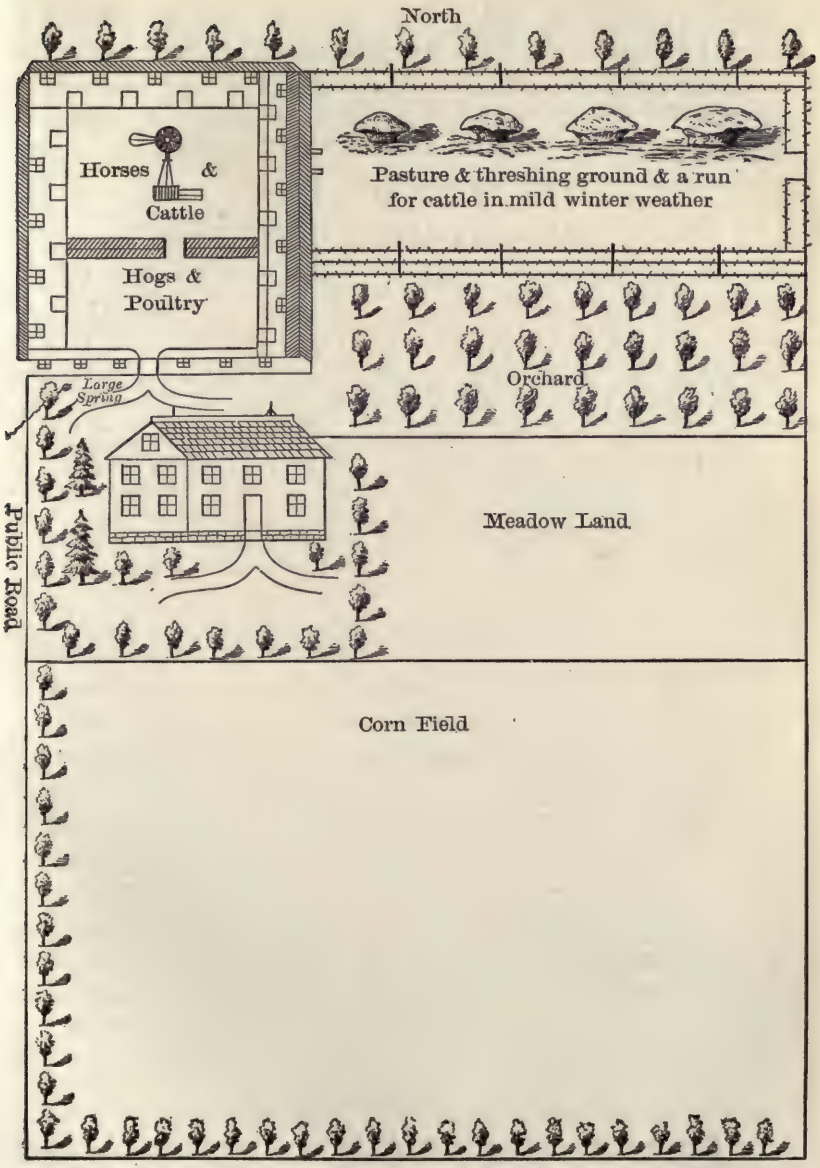
horses, forty Short-Horns and grade cattle, besides hogs and chickens. I herd my cattle on the range in Summer and feed on the farm in Winter. When the farm lacks food to feed the stock, I buy from adjoining farms. My place I farm in wheat. I cut it with the McCormick self-binder, and shock it. When dry I haul it to the cattle lot and thresh out or stack, and thresh at the most convenient season.

HORSE AND CATTLE YARDS.

The first yard is for stock in stormy weather. It is surrounded by buildings so as to protect them from the severe storms. My horse, cow and pig stables are built around, with doors facing the inner lot, so that the stock can run out in the daytime and be stabled at night; or at least a part of them can have stables. Here in Kansas most of the dry cows and steers are allowed to run out all the time, and will do well if they have sheds for shelter and are protected with wind-breaks, and have plenty of corn fodder and hay. They will come out in the Spring in good condition. Through the center are my corn cribs, which answer for a division of the corral, with a gate in the center to pass through, or to let stock run from one side to the other. If it is not desirable to have horses and cattle together, the horses can be let out on one side and the cattle on the other. My feed troughs are put alongside of the corn crib to feed cattle. To the right of my plan is a lot fenced with barbed wire, where all the small grain is hauled, to thresh, so my cattle can have a good run to straw stacks in mild weather, and in bad weather I house and feed with hay and corn fodder, which I haul direct from the fields into the yards. I also furnish water in Winter lot so they can have plenty at all times.

WHEAT.

The best way that I have found to farm wheat in Kansas, is to plow my ground five or six inches deep in July or August, in July if possible, as I am an advocate of early plowing. I harrow three or four times to get the soil pulverized and packed.


North
Horses & Cattle
Hogs & Poultry
Pasture & threshing ground & a run for cattle in mild winter weather
Orchard
Large Spring
Public Road
Meadow Land
Corn Field

When I roll the ground, I do so before I drill or seed, as otherwise the ground can not be brought into good condition for a good wheat crop. When my soil is in good condition, I drill in my wheat east and west, so that the drill rows catch the drifting snows, and thus protect the young wheat plants, a matter of great importance in hard freezing weather.

WHEN TO SOW.

Wheat should be sown here in Kansas from the twenty-fifth of August to the twenty-fifth of September. Some times I get a crop sowed in October, but as a rule early sowing is best. As to the quantity of seed to be sown per acre I have not fully decided; yet some claim that one bushel is enough, while others claim one and a half bushels to the acre. My experience is that one and one-fourth bushels is all that any ground requires of wheat seed if sown early. If sown in October or November one and a half bushels can be sown. The best time to harvest is when the kernel is going out of the dough state, and is getting firm or hard. The sooner wheat is cut after it is out of the dough state the better, as wheat will not have such a rich color if permitted to stand too long after it gets ripe.

METHOD OF HARVESTING, THRESHING, AND COST OF CROP.

Wheat is mostly harvested in Kansas now with self-binders and headers, of which I would recommend the latter for cheapness, and for doing better work than the binder. But care should be taken to stack the heads well, and not to cut when the grain is wet or green. I have had both on my farm, and can say that the header is much cheaper. If land is sown to much Spring grain, and the ground is inclined to weeds, then I would recommend a self-binder, as it would not be safe to head wheat or oats that have many weeds in, as it would surely spoil all.

COST OF RAISING WHEAT.

I will give you the cost of raising wheat in Kansas as nearly as I can average the cost. Some pays more and some

less. Our yield per acre is, on high prairie, from ten to forty bushels, averaging from fifteen to twenty. Price averages from 65 cents to $1.20 per bushel.

Plowing per acre - - - - -	$1 00
Dragging three times at 20 cents - -	60
Drilling per acre - - - - - -	30
Seed, say one and one-fourth bu., - -	1 00
Heading and stacking per acre - - -	1 25
Threshers, finding all at 7 cents per bushel, about - - - - - - -	1 05
Total cost per acre - - - -	$5 25
Yield per acre average 15 bush. at $1.00	$15 00
Net profit - - - - - -	$ 9 75

The above statement is only an ordinary yield. With careful culture and a good season, thirty bushels can be raised per acre with about the above cost and more than double profit.

HORSES.

In my experience, the best horse for general farm use is a cross between the trotters and some of our heavy draft horses, the first giving style and activity, and the latter giving size and strength.

CATTLE.

For beef I prefer the noble Short-Horns of the Western Reserve.

HOGS.

These, according to my way of thinking, are a cross of Poland China and Berkshire.

The best way to make money on stock is to keep none but the best breeds, and feed liberally all the time. Early maturity is the road to success. Two pounds of flesh can be laid on the yearling calf with the same amount of food that it would take to put one pound on the three year old.

BEST FOOD FOR FATTENING.

I use oil cake and Indian corn, but the best rough feed for

cattle is early cut corn fodder, well cured; the second best is early cut hay. Good breeds, with good feed and water, and protection from heat, rain and cold, with kind treatment, will pay a handsome profit.

GEORGE N. NICHOLS,

DELPHOS, CLOUD COUNTY.

Important Facts With Regard to the Opening and Location of New Farms.

Chief among the multitudes of matters which challenge the attention of a settler in a new country, as he enters upon land just as it came from nature, untouched by the hand of man, is the proper location of his buildings, yards, out-houses, stables, etc., with a view to health, convenience, and the gratification of his æsthetic nature. Health, of course, is the first consideration.

BAD ODORS OBJECTIONABLE.

There is no greater nuisance about farm houses than bad smells, emanating from the yards, corrals, and out-houses; and, generally speaking, nothing is more inexcusable. The air in and around the house should be pure and sweet to insure health and cheerfulness, without which life is a burden, and no amount of meek resignation to divine dispensations will thwart the inexorable process of law. The house that is filled with foul odors is filled with fearful dangers, likewise, that in time will manifest themselves to the most resolute, and undermine the strongest constitution. I am positive that a very large majority of the cases of malarial fevers to which new countries seem more subject than older, arise from causes which were wholly under the control of the sufferers, and which might have been avoided by the observance of certain facts within the knowledge of all.

WHERE TO BUILD A HOUSE.

Here is my suggestion, based upon an experience of nine

years in this State. If you can have a choice as to which way you may have your house front, then I would say the east; next the south; then the west, and lastly, the north. There is little danger of too much sunshine in the living rooms, even in this sunny State. If it is to be located upon an east and west road, set it far enough back so that the hog pens, cattle yards, stables, etc., may be due west or east from the house. Never place them upon the north or south, or any of the intermediate points of the compass. The west is the best place, all things else being equal.

KANSAS WINDS.

The winds here very rarely indeed blow from that point. Only one day have they come from the west during the past year (1879). They have blown a little oftener from the east, but rarely from that quarter. About three-fourths of the time we have had them from the south and the remainder from the north, varying occasionally to the intermediate points.

HAVE YARDS AND STABLES DISTANT.

The yards and stables should be at least ten rods from the house. The outbuildings should also be due west or east, as the case may be, from the house, and never nearer than four rods, while the house well should be as far removed from it as convenience will warrant; that is, let the house be about midway between them. It is a well established fact that the impurities contained in drinking water are a prolific source of fevers, and should be carefully guarded against.

PLAN FOR A HOUSE.

My house fronts the east, upon a north and south road. My yards are upon the east side of the road, about twelve rods distant from the house. My out-house is due west, four rods, and the house well northeast. We are very seldom troubled with foul smells, and our well water is as pure as water can be without filtering.

A HOMESTEADER.

I have lived in this section over nine years; homesteaded

my land. Every thing was new at the time of settlement. Since then thousands of acres have been broken up all around me. As I came from New York, I had climatic changes to undergo, and was subject to the same general climatic influences as others, with this result: While a large number of our people have been troubled with chills and fevers at different times, worrying over doctors' bills and buying quack medicines, myself and family have never had any of these ailments, and no doctor has ever entered our house, professionally, since our residence here, though my wife at the same time was never robust. I do not consider our immunity from disease as a special interposition in our behalf, but rather the observance of a few common sense ideas.

CONVENIENCE AND TASTE REGARDED.

While looking after the sanitary arrangements, we should also keep in full view convenience and taste. To the north of my house, acting as a wind-break, are the orchards of peach and apple. I would always place them there if possible. To the west is an artificial grove. Thus we are protected from the severe, piercing winds of Winter.

The lawn surrounding the house is set with shade trees, which serve the double purpose of ornament and partial shade, obscuring the rough appearance inseparable from farm yards, such as stacks, cribs, pens, stables, etc., which are across the road.

We can not be too careful in guarding our homes from noxious smells and vapors. And a little regard for the laws of health in planning and building, will as surely save us from many unnecessary doctors' bills, as a total neglect of them will sap the strongest constitution and banish contentment and happiness from the family circle.

WILLIAM LOCKARD,

LODI, BARBOUR COUNTY.

A Cattle Ranch — Branding — Round-Ups — Income — Amusements — Hospitality.

On the first day of September, 1877, I began moving my traps to this place, then wild and unsettled, my nearest neighbor being four miles away. I selected the land for its good water, range and timber, and have made it a stock ranch.

Plan No. 1 represents the form of the land as entered, showing the streams of water, which rise in springs a short distance below the north line of the ranch, and sink in the sand near the south line, when the weather is dry. There are about sixty acres of timber, all bottom land, leaving one hundred acres in grass. The timber consists of black walnut, cottonwood, white elm, hackberry, mulberry, gray ash, and a few small cedars; the brush is arrow-wood.

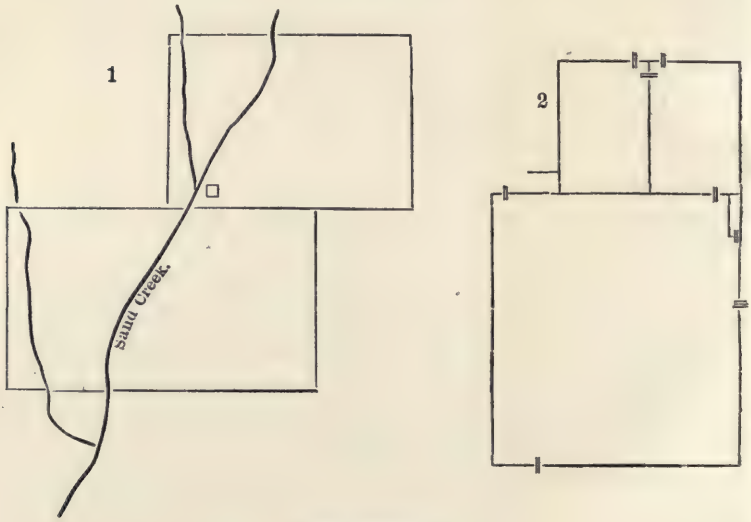
The dots mark the location of the buildings, the square representing the corrals.

CORRALS.

Plan No. 2 shows the form of the corrals, three marks representing the double gate, two the single gates. The pen in the northeast corner of the large corral, with a gate at both ends, is the branding pen. The buildings, yard and corrals are well shaded in Summer with timber, and protected by the same from the cold winds of Winter. In the large corral are salt troughs, where salt is always kept. The gates are always open, excepting when in use. From the southeast corner runs out a wing or fence to keep the cattle from running around the pen when being driven in. On this ranch and the surrounding range, in 1879, were three hundred and eighty-four head of cattle and twenty ponies. One young man takes care of all, excepting when it is necessary to "round up," when

he has two hands to assist. This young man is constantly in the saddle; he rises at peep of day, feeds his ponies, eats his breakfast, and is gone. He rides among the stock, sees where they are and what they are doing, and renders such care as may be required. He generally returns at two o'clock P.M., and has the remainder of the afternoon for rest and recreation.

PLAN OF FARM AND CORRALS.



BRANDING.

On small ranches, like this, there are generally two or three "round-ups," during the Summer or early Fall, to mark and brand the calves. The cows and calves are driven into the large corral, then as many into one of the small corrals as it will hold. The cows and calves are now separated by driving the cows back through the gate and keeping the calves in; the calves are then turned into the third corral. The process is repeated until all the calves are penned by themselves. A fire is kindled, the branding irons are heated, all is ready. The gate into the branding shute is then opened and the

calves, trying to get to their mothers, fill it completely, when the gate is closed. Next, the boys put a rope around a calf's neck, he is taken back into the corral and tied to a tree, another rope, with a slip noose, being placed about his hind legs. A man on a pony takes the rope, gives it a turn or two around the horn of the saddle, the pony pulls and brings the calf down on its side, holding it there until the brand is made and the knife applied, when the rope is taken off its neck, the other rope is dropped and falls off. In this way, when necessary, the large as well as small animals are branded. This is better than branding in a shute, for one can be sure that the brand is good.

ROUND-UPS.

The largest and most important round-ups are in the Spring, after the long hair of Winter is shed, generally beginning in the latter part of April, and sometimes extending into June. Word is passed around that a round-up will be at Mr. A's ranch on a certain day. All the cattle on that range are gathered on as smooth a piece of ground as may be found near the ranch. They are kept together, a few men surrounding them; then those who have cattle ride slowly and gently among them, and as each man finds one of his own animals he drives it gently to the edge of the herd. The horseman slaps his quirt against his leather overalls; the animal, before aware of what is up, is scared out of the herd. Thus a dozen or twenty are cutting out of the same herd at the same time. After all are satisfied, each bunch is inspected to see that all is right. If any dispute arises as to the ownership of an animal, that the brand is not plain, the animal is lassoed, thrown down and the hair shaved off. The true brand is then apparent, so that all are satisfied. In these round-ups there are always hundreds, and often a few thousands, in one bunch. Those that attend these round-ups, if they have many cattle together, take with them two ponies each, blankets for sleeping, and horsefeed. They expect to live in the open air, without shelter, for six weeks.

On this ranch, if the cattle become thin, they are brought in and fed hay and corn if necessary. The losses of a Winter

range from one to three per cent. One source of loss is the black-leg, the only disease causing very serious results. The cause of this disease is said to be too much nutriment. In skinning the dead animals we find patches resembling bruises, or appearing, as we frontiermen say, blood-shot. A preventive for this is to pen early and turn out late, twice a week.

INCOME.

Not having managed this ranch for a very long time, I am hardly prepared to state the yearly income. Thus far the steers which have been sold the Summer or Fall after they were two years old, have paid all expenses and made the improvements on the ranch, leaving all the heifers for clear profit. Others, who have been longer in the business, have done better than this, putting back some of the money into more young stock.

We raise no grain; hay is our only crop, corn never having been a success in this county. Corn is hauled in wagons from the bottom lands of the Arkansas river, one hundred miles away, and is worth here fifty cents per bushel.

AMUSEMENTS.

Reading is the favorite pastime; we keep well supplied with papers and market reports, so that we know what is going on in the world of business and politics. Books appear as public property—passing from ranch to ranch—and are read by all. History is a favorite subject, though travels and novels are not neglected.

Croquet is the game best liked; men and women, old and young, join in the sport with a relish. Our grounds are thickly shaded, so that it is pleasant out of doors, in the warmest days.

The house games are dominoes, checkers, author-cards and cards.

The ladies enjoy horseback riding; they always have their ponies, and often gallop off in the morning five or ten miles to see friends, returning at night.

The evening, if we have no company, is passed, after the lamp is lit, one hour in reading, one hour in games, half an hour in conversation, then to bed. If we have company, and

the evening is fine, which is the case generally, croquet is played by lantern light.

HOSPITALITY AND INDIANS.

Ranchmen are generous almost to a fault. They feed and lodge, without charge, every person who comes to the ranch; high or low, rich or poor, black, white or copper-colored, all are provided for alike. By this kindness the copper-colored murderers got the advantage in the Fall of 1878. They had been in the habit of coming to the cattle camps or ranches to get food, and the generous ranchmen, not only gave them plenty to eat while they were there, but also provisions to carry away with them. The few white persons who escaped assassination, bear witness that the Indians came, apparently as friendly as they ever were, asked for something to eat, as usual, and when the whites were off their guard drew their revolvers from under their blankets and began firing. Some of our best men were thus murdered in cold blood. Murry, a young man, beloved by all who knew him, for his steady habits, his attention to business, and his gentlemanly deportment, was murdered by those whom he had fed when hungry and had given shelter from cold and storm. If these had been white men, they would every one of them have been hung, as they deserved to be.

Ranchmen are true friends; there are few hardships they will not endure for a friend, and their assistance can be relied on in time of sickness or trouble. They assist each other in putting out fires, gathering their cattle, branding and blabing, and never think of making a charge.

They dress in common business clothes, under leather overalls that are well greased, carry with them an overcoat and oil coat, wear the indispensable broad-brimmed hat, and have a six-shooter strapped around the waist.

STOCK ON THE RANGE.

The stock interest is so large in this hilly portion of Kansas, that a short account of it will, I think, prove interesting to say the least. Some stockmen have cattle here on the

range, and live with their families, in the railroad towns. This stock is usually in the care of persons who have a share in it.

A DUG OUT.

These men live in what are called dug outs. That is, a hole dug in the hillside, with poles and brush over the top, on which is piled dirt in the place of shingles. A door on the lower side of the hill is used for the double purpose of entrance and a window. A fireplace is dug in the earth wall and a few sods placed around the top, on the outside, finishes the chimney.

FURNITURE.

The furniture is of the simplest order, and consists of one or two nail kegs and a cracker box. A few of the ranchmen make a bedstead of poles, but generally a few blankets piled in one corner is the only place of rest.

THE COOKING

is also done in a very primitive way, and the utensils consist of an iron pot, in which meat and vegetables are boiled; a skillet and lid for baking, a frying pan and a coffee pot, comprise the outfit. The table is furnished (only the table has not come home yet) with a tin plate and cup and a spoon to each person.

The saddle and bridle are lying where the pony is stripped, and the horses are leisurely feeding on the wild grass, not far from the dug out. These men have no corrals or pens of any kind, but when they wish to brand or blab, they drive their stock to the pens of some permanent ranchman, and use his shutes and corrals. All hands eat with the owner. When the work is done and the stock started for home, the "boss herder" rides around and says, "if you pass our way, call. Good day."

THE GENEROSITY

of stock men is so universally known that they often feed entire strangers. In the counties on the north and east, known as herd law counties, there are numbers of farmers who are poor. During the season they can not work on their farms they go into the Indian Territory to cut and haul cedar posts to the rail-

road towns. At best, this is a slow and hard way of earning a living. Often as many as six teams and as many men, will drive up to the ranch and ask for food and shelter for the night. We always give them their supper and breakfast, and when they leave in the morning, one of the men will say, "Well, boss, we will make this all right at the round-up."

HOMES.

Some of our stockmen have neat residences in Medicine Lodge, where they live with their families, and have permanent ranches in other portions of the county. These ranches are fitted up with conveniences for handling stock and are also comparatively comfortable for their men. The owners of these ranches ride out two or three times a week to the range and superintend their ranch in person.

BACHELORS.

We have also quite a number of single men engaged in stock raising. They live in a hewed log cabin, with roof covered with gypsum; a shutter to the door, and a glass in the window. A home-made bedstead, a table, a cook stove, a shelf against the wall for books and newspapers, and some have even the luxury of a chair, and a looking-glass, as large as your two hands.

The largest number of our ranchmen are living with their families on permanent ranches. Many of these ranchmen have a young man living with them who own stock themselves. These men take care of all the stock on the ranch. Such an arrangement is mutually profitable.

PROFITS.

Ranching is profitable even where you are only able to keep all the heifers. In this way you save one-half the annual income. But the majority are doing better than that. Ranching is a pleasant, free and easy life, and the saying of the cowboy is, "I will not do any thing I can not do on horseback."

WANDERERS.

There is still another class of stock-raisers. They have no

settled place of feeding their stock. In the Winter they go into some deserted dug-out, and during the Summer live out of doors, or, at best, with only a wagon cover over them. In this way they wander wherever interest or inclination leads, carrying with them as little as possible to camp with.

MORALS.

The morals of the ranchmen are very much underrated. They will compare favorably with the same number of people in any other calling. Intellectually they are above the average. There are men here from every State in the Union. Men who have come direct from the common school, and graduates from our best Eastern colleges. Some young men from the East, who came here to go into the cattle trade, remarked in the presence of an old ranchman "that they were all college graduates." The ranchman replied, "Oh, never mind that, boys, if you behave yourselves well we will receive you into society all the same!"

CHARLES WILLIAMSON,

WASHINGTON, WASHINGTON COUNTY.

Mixed Husbandry the Most Profitable — When and How to Sow Winter Wheat, Oats and German Millet — Bees, Keep them Well Filled with Winter Stores — The Garden — Fruit — Sheep and Hogs.

After twenty-five years of tilling the virgin soil of Kansas, subduing the wild grapes and prairie sod, and cultivating all kinds of cereals, handling at the same time all kinds of stock, raising all kinds of fruit, and not neglecting even the apiary, I propose to give the various modes of cultivating crops which are to-day the basis of successful farming in northwestern Kansas.

My farm consists of part upland prairie and part bottom land, on Mill creek, on the Central branch of the Union Pacific railroad.

I find mixed crops the most profitable for, if I fail with one, I gain with another, and the same is true with the market value.

WHEAT.

Spring wheat is very rarely profitable or a good crop, as it affords a harbor and hatching place for the chintz bug. Fall wheat is a success under certain conditions. In July, as soon as the growing crop is cut, be it oats or wheat, the plow must follow the reaper immediately. The land should then rest until the first to the tenth of September, and then be sown with drill. The seed must be clean and free from weed seeds. The varieties sown are Fultz, Red May, White Winter or Rocky Mountain. If the weather in March be dry, the ground should be rolled. The yield, when sown as above described, is thirty to thirty-five bushels to the acre on an average; while late plowing, late sowing, and foul seed, yield from one and one-half to three bushels to the acre.

My oats are put in early on ground plowed in the Spring. I sow two bushels to the acre, and harrow. The ground will average from sixty to one hundred bushels to the acre.

CORN.

The land is plowed in the Fall and planted the middle of April, following with harrow cultivation, commencing before it is up. That plowed in Spring is planted at once after plowing, and planted from the first to the tenth of May. The yield is from sixty to one hundred bushels to the acre. The largest yield of corn is on the bottom, and of wheat, oats and barley on the prairie.

MILLET.

German millet should be sown at the same time as Spring plowed land for corn. It yields three to four tons to the acre, and forty to fifty bushels of seed, and makes excellent feed for stock, fed with prairie hay. Thus I save my corn for my hogs.

STOCK.

I sow barley and plant artichokes as Summer feed for hogs in the pasture, giving them access to running water.

As the result, my hogs are free from disease. I salt my hogs the same as my cattle, adding sulphur occasionally, to keep off hog cholera and murrain. My prairie hay is cut, and cured two weeks earlier than my neighbors. I consider it more nutritious than late or frosted hay. My cows are kept at home, in a small herd or pasture, for home use. My young cattle are sent to the herd, some ten miles away. I pay one dollar per head for herding and salting, from the first of April to the first of October. I then take them home and feed and superintend their wintering. I separate, in feeding, my young heifers from my steers, and feed the calves by themselves. I do not allow cattle and sheep to be herded together, for the reason that land that has been grazed by sheep, if fed on by cattle will produce catarrhal diseases, and check their growth. I also insist that my cattle have pure water and plenty of it, for it is as much a desideratum as feed. My prairie hay costs me one dollar per ton in the rick, put up on the ground.

HOGS.

My experience in growing hogs is that the best are the Poland China, and large-boned Berkshires. I manage to keep a hog that can be fattened at any age, and will weigh two hundred and fifty to three hundred pounds when a year old. Our hogs follow the cattle, and by so doing save one-quarter of the corn fed.

BEES.

I plant buckwheat in my orchard at the second plowing and try to have blossoms for my bees from Spring to Fall. Thus, with the wild flowers and timber added, I have an abundance of feed. Honey taken from the hives in the month of July last, averaged fifty pounds each, and my profits from ten stands this Summer were one hundred and fifty dollars, and the increase on new swarms added fifty dollars more to that sum. I have neither disease nor moth among my bees. I Winter them out of doors under a shed facing the north, and which is protected by my house. It is open on the north and east, and closed to the south, for there is nothing colder or more chilly

than the north end of a south wind in Kansas. The secret of my success with bees is keeping them well filled with Winter stores.

Our bees are wintered on stands placed under a shed ten feet by fifteen or thirty, facing the east. It protects them from the hot sun in Summer, and the cold in Winter.

THE GARDEN.

I have a very fine garden in the bottom land, which is highly manured in the Fall and Spring. I buy the most reliable seeds in the market when I can not raise them myself. I have to thank the Agricultural Department at Washington for some of my best. I plant early, often in the Fall, and my vegetables are ready for the early market, and I am neither too proud nor ashamed to peddle my own products in my buggy in the village. There is a false pride that keeps many poor, and deprives home of its comforts. The early rhubarb is often my best crop; next potatoes. The Beauty of Hebron and Early Rose succeed best here, when planted early.

FRUIT.

I have raspberries, blackberries, and peaches, and in a short time will have plenty of apples. Peaches bear from the seed in three years; apples in five years. The Mammoth Cluster and Doolittle raspberries are best. For blackberries we have Kittatiny and Snyder, and the natural blackberry and raspberry.

Within my range of vision I see farms upon which one hundred varieties of fruit have been planted at a large expense, when experience tells me that ten varieties of apples that have been tried, are worth them all.

HOME.

If my home does not please the eyes of others, it affords me pleasure, and meets the wants and preserves the health of my family. I have two essentials, good ventilation and plenty of sunlight. Where the latter does not enter the physician does. My kitchen is built to save steps, and econo-

mize time, as from it my bees are always to be seen. My bedrooms have sunlight and pure air.

We use no tobacco or alcoholic drinks at our home, but after the day's work is done, my boys and girls gather around the table to read the monthly magazines and other journals.

God made the country, and in its well-ordered farm homes will be raised the children who are our present hope and future rulers — our nation's safeguard.

FEEDING AND WATERING STOCK.

Here in the West we utilize our streams and springs for watering our stock, for plenty of good water is as much a necessity as food. On the prairie we use windmills. For feeding stock and cattle we use a square pen, the posts set in the ground, and poles or plank nailed on, made tight below, so that the hogs can not break in. We feed corn in long wooden troughs or boxes two feet wide, ten inches high, and sixteen feet long. The posts are set in the ground, with cross pieces to hold up the same.

For sheep all we need is a dry, open shed, facing the south on rolling ground, so that the manure and water will not settle there.

The fountains of our springs are so high that we conduct water into the house, barn, sheds, and yards, the whole year round. On one of my farms at Palmer, on the Pacific railroad, the tank at the depot is supplied from a spring one hundred yards from it, and conducted under ground. It then rises twenty-five feet, keeping a large tank full. On the same farm, and sometimes not over twenty-five feet distant from each other, will be found soft, hard, and medicinal springs. My hogs are supplied with a pump alongside of the pig pen. The hogs left out run to the creek.

AMBER CANE.

I consider this a promising industry. I raised sixteen acres of cane this year, and found a ready market at fifty cents a gallon. Next year I expect to make sugar. I always place my mill higher than my boiler. The sirup made from

Amber cane beats any other kind now in the market, and I will say here, if you have any sheep, burn up the refuse seed and stalks of any cane, or it will kill the sheep who eat it. It also produces abortion and loss of lambs. I lost forty head a year ago, and paid dearly for my knowledge on this point.

B. D. WILLIAMS,

HIGHLAND, DONIPHAN COUNTY.

Cattle Raising — Farm Well Timbered and Watered — Cattle and Mules — Cost of Stock per Head — Hogs Profitable — A Grazing Pasture of One Thousand Acres — Fall Wheat Most Remunerative — Believes in Plenty of Stock — A Peach Orchard.

I have handled cattle for nine years, and for the past four years have managed a farm of seven hundred and forty acres, in Doniphan county, Kan. I shall not assert that we carry it on in a model way, for Kansas is as yet new, and has by no means reached a model system of cultivation; but I think I shall be safe in saying that no other country can show as valuable results, as Kansas can, for the money and labor expended. We are two and one-half miles from Highland, Doniphan county, and seven miles from the Atchison & Nebraska railroad.

HOW MY FARM IS DIVIDED.

This farm is divided into eight different lots. One lot, composed of one hundred and sixty acres, and which has no living water on it, is used for farming land; another lot, of one hundred and thirty acres, which also has no living water on it, is in timothy and clover for meadow. The remaining thirty acres of this quarter section are divided as follows: Eighteen acres of it are in timothy and clover pasture; five acres are set out in an orchard, and seven acres are planted with a nice hickory and walnut grove, in which are located the house, barn, sheds, cattle lots, etc., with a splendid stock well, only eighteen feet

deep. Next adjoining this on the west, are one hundred and sixty acres, which are portioned off into fields as follows: One fifty acre field is seeded to timothy, and one thirty-five acre field is seeded to timothy.

These two lots join seventy-five acres of timber and other pasture. This pasture has a strong spring on it, the head of which is in the grove, and which makes a good running branch for about sixty rods through the grove, supplying plenty of water for almost any number of stock. Stock of any kind can step into the stream, at any point, and find abundant water. South of this lot are eighty acres of farming land, which is enclosed by itself. The five hundred and sixty acres I have thus described, are in one body. One mile from this are one hundred and sixty acres of prairie pasture, fenced with posts and five boards, so as to hold cattle and hogs. This was used for feeding corn to cattle and hogs on grass, before we got our timothy and clover pasture, but is now employed for pasturing breeding stock. It is watered well with springs, which have never been known to fail. It has a grove of about five acres, which is of great value to stock, affording protection from heat in Summer, as well as cold and winds in Winter.

CATTLE.

In connection with this farm I carry from three to four hundred head of cattle, mules, and horses, averaging about three hundred head of cattle, fifteen mules, ten horses; also from one hundred and fifty to four hundred head of hogs. I am turning my attention more to raising and grazing stock than to raising corn, buying big steers and feeding. It has been largely done in this State, though the method of farming and stock feeding has not shown any very good average results, since I have been acquainted with the business. We think it necessary to successful farming, to carry all kinds of stock with the farm that does not interfere one with the other, or that the situation or condition of the farm makes it convenient to have.

NO FENCING FOR SHEEP.

One kind of stock that we do not try to handle in this

part of Kansas, is sheep. The farms are not commonly fenced for sheep, and cattle do not like to graze where sheep graze and bed. In the Fall of 1878, we bought one hundred and sixty-five two-year old steers, at an average cost of twenty-seven dollars and thirty cents per head. With this string of cattle we put twenty-three head of our own raising. They were the same age, and we think they cost us much less per head, and were better cattle.

PROFIT OF CATTLE.

I ran these one hundred and eighty-eight cattle together in stalk fields, bought at twenty-five to thirty cents per acre, until March 10th, 1879, at about the cost of five dollars per head, thus making the stock cost thirty-two dollars and thirty cents per head March 10th, and they were in fine condition. I then selected out sixty-eight of the best, put them on full feed in a good timber lot, without any grass, and they stayed here until June 22d. They each consumed about forty-five bushels of corn, which was worth eighteen cents per bushel, or eight dollars and ten cents. The cost of a man to feed them did not exceed fifty cents per head, as he had about two hundred other cattle to feed, increasing the cost to eight dollars and sixty cents per head. This made these cattle cost forty dollars and seventy cents per head at time of sale. I sold them, and they weighed over fourteen hundred pounds on the average, bringing the average price of sixty dollars per head. This left nineteen dollars and ten cents profit per head. The remaining one hundred and twenty head were roughed until April 10th, then put on full feed on grass and corn, where the pasture, feed lot and all accommodations were furnished, with the corn, by paying twenty cents per bushel for the corn. They were fed about four months, and cost ten dollars per head for corn and feeding, and six dollars for roughing through the Winter. This, added to the first cost, made each steer cost forty-three dollars and thirty cents. When sold, they brought an average of fifty-eight dollars per head, leaving fourteen dollars and seventy cents clear. This profit, however, would not be so

large if interest on the money and taxes on the cattle were taken out.

HOGS.

We sold twenty-six hundred and fifty dollars' worth of hogs, which were fattened mostly by the drift and waste from these cattle. So the profit obtained would still be larger than I estimated, if the exact expense were added to the cattle, and the profit on the hogs added to the proceeds. I have obtained better results than these, even, by raising the steers, and buying them when calves at weaning time, or at one year old.

Hogs can be raised on my farm very cheaply, by means of clover, with but very little corn.

CATTLE ON HAND.

I now have on hand some two hundred cows and heifers, which will do to breed next Spring. Of these, about one hundred are high grade. I have, for the purpose of breeding to these cows and heifers, fine thorough-bred bulls. I have three fine young thorough-bred males of my own raising. I keep a few well bred Short-Horn heifers, as I expect to raise my own breeding stock and have some to sell, rather than to be compelled to pay out several hundred dollars every year for this purpose. I think it highly important to have the best animals that can be obtained for breeding purposes. I paid four hundred dollars, this year, for a calf, rather than use one that did not fill the bill, and which I could get for less money. Some are afraid to have their ground trampled a little by stock. While I do not believe trampling to benefit in wet weather, and think that they should be kept off as much as possible when the ground is soft, still I think stock are almost indispensable to the success of a farm. I think those farmers who keep no stock, but run their land every year in corn and wheat, raking and burning their stalks, and burning their straw, will soon complain of poor crops and hard times. It is hard, after a man has raised a poor crop of corn, to have to haul it from ten to fifteen miles, and sell it at from fifteen to twenty cents per bushel.

But, on the other hand, if plenty of stock is kept on the

farm, so that all the straw and stalks are fed out, and the manure is hauled out on the farm, good crops will come, and it is much easier and better to drive a good bunch of fat steers and fat hogs ten or fifteen miles, than to be stringing along hauling corn, when the farmer should be at home plowing or attending to his stock, spreading the manure out over his fields, or doing what there may be to do.

A GRAZING PASTURE.

I propose to add to my farm about one thousand acres of land, situated some fifty miles west, as that is as near as I can obtain good grazing grounds cheap, in a body. I shall put my breeding stock on this ranch, where I can keep them the year round with little expense. Thorough-bred cattle will be raised on the farm, and cattle that are about ready for the market will be brought to the farm and finished off in good shape by feeding on tame grass and corn.

GRAIN CROPS.

Of the small grain crops, Fall wheat is the most profitable here, and should be raised largely, as corn can not, or should not, be raised, more than every other year, on the same ground. There is certainly no other small grain raised with so much success or profit as Fall wheat.

A PEACH ORCHARD.

One man with a plow and two or three boys to drop peach pits, can plant a peach orchard in one day, that will, when three years old, yield more peaches than one family will want, and will make all the firewood needed for three or four years and still be a peach orchard, unless, of course, it should meet with some misfortune. Labor spent in planting trees and hedges, and caring for them while young, is always well rewarded.

Clover, which grows so finely in our State, should not be neglected; it should be on every farm, for it will produce more and better pasture, for five months of the year, than any thing else used.

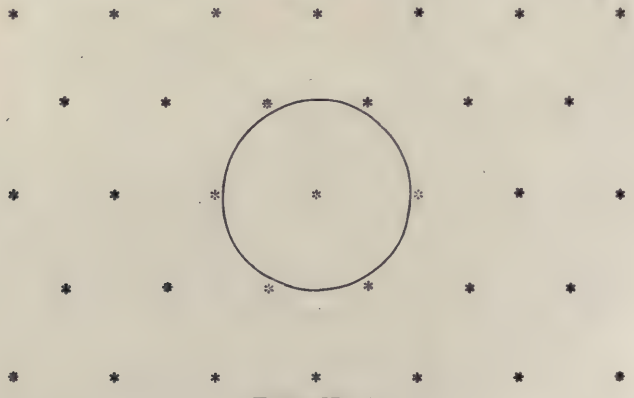
I. R. PIERCE,

WHITE CLOUD, DONIPHAN COUNTY.

The Most Advantageous Manner of Planting Orchards.

HOW I SET OUT A PLANTATION.

I have a preference for the quincunx form in setting out a plantation. You will observe, by close attention to my diagram, that twenty-one and a half feet of ground are saved by adopting this form in setting five rows. Get the trees thirty



FORM NO. 1.

feet apart in all directions. This saving of ground is quite an object. It saves about five feet four and one-half inches to each row or space between the rows of trees. Another advantage is, it is more ornamental, and if the rows are set north and south, three rows form a perfect wind-break on the west and east sides of the orchard. When set east and west, then the wind-break is on the north and south sides of the orchard. To set an orchard according to No. 1, or quincunx form, the plat of ground to be set to trees should be squared as you would square the foundation for a building. This may be done in the following manner: I have always commenced at the north-

east corner of the land to be set in trees, by driving a stake in the ground at that corner, and then setting two stakes on the line running south. The first stake should be about ten rods distant from the corner, and the second stake about ten rods further south. I have now, counting the corner stake, three stakes in line with my first row of fruit trees, or the east row. I now set one stake ten feet south of the corner stake, in range of the three above named stakes.

HOW TO SET STAKES.

Then I set one stake west of the corner stake, and ten feet distant from the corner. Now draw a line from the stake on the east side, ten feet south of the corner, to the corner stake, and wind it once around the corner stake. Fasten it to the stake ten feet from the corner on the north side. Next take a ten-foot pole, measure eight feet on the east line, beginning at the corner, and make a mark on the line. Then measure six feet from the corner, on the line running west, and make another mark on the line. Now it requires two men to handle the ten-foot pole, one at the mark on the line on the east side, and the other at the mark on the line running west from the corner.

HOW TO TELL IF DONE RIGHT.

If these marks on the lines are ten feet apart, the work is square. If they are not, then move this stake on the north a little further to the north or south, so as to bring these marks on the lines ten feet apart. Then your ground is squared. Now set two stakes on the north side of the orchard ground, on a line with the corner, and a stake ten feet from the corner. You now have your orchard ground started square, and you can continue these lines to any required distance and it still remains square. With care you can set your trees so that they will form straight rows in all directions. If your orchard plat does not prove square you can not make the trees form straight rows in all directions.

THE STARTING PLACE.

With regard to setting out trees on the quincunx form, I

would say that after my stakes are set on the east and north, I take up the corner stake and set a tree in its place, and set a row on a line with the stakes on the east side, say thirty feet apart. Now one row is set. Go to the corner where you commenced, and use two sticks thirty feet long. Place the end of one against the corner tree, laying it on the ground in a southwest direction. The other stick must have one end placed against the first tree south of the corner tree, and be laid on the ground running in a northwest direction. Hold these sticks against the trees, and bring the ends together. That gives the starting place for the second row. Drive in a stake at this point, then take one of the poles, put one end against this stake and lay it on the ground in an easterly direction, so that it will pass over the center of the space between the first and second trees. Make a mark on the pole on a line with the row of trees. Now you have the proper distances at which to set the rows. I use but this one pole. I walk along the row and lay the pole on the ground with the mark even with a tree, and then take a stake and walk to the end of it and drive it down. So on, until the three stakes are set. In this second row, the first, or north tree, should be set fifteen feet south of the line of stakes on the north side of the orchard, then the first tree in the third row would be in a line with the stakes on the north side of the orchard ground.

HOW MANY TREES TO PLANT.

You will see by the compass circle in the above form, that, by placing one point of the compasses on one star, or tree, opening them half an inch and striking a circle, it touches six trees. In this plan I give to each tree a circle of ground to cover, so that before growing so as to touch each other the ground would be entirely covered or shaded, thus giving the needed moisture to the young fruit. The quincunx form has great advantage over the old square form. I have been very particular in describing the work of setting an orchard in this form, on account of a mistaken notion of which I will speak in describing form No. 2.

I have ten acres in fruit trees. I have apples, pears, peaches, cherries, and plums, which are all set in the above form. Strings or ropes should not be used in measuring distances at which to set fruit trees, as their elasticity will spoil the process.

FORM NO. 2.

I have seen orchards set as per form No. 2, that claimed to be quincunx form. But it is easy to see the mistake. By that form the compass circle only takes in four trees, with one in the center. Then again, in the middle row in that form, the trees are about eighteen feet from those on each side of it. The trees in rows are thirty feet apart. This is done by setting the trees in the old-fashioned square form, and then setting a tree in the center of each square formed by four trees.

FORM NO. 3.

Of form No. 3, or the square form, I have little to say, only that it takes about twenty-one and one-half feet more ground in width, the entire length of the orchard, to set five rows of trees thirty feet apart each way, than it requires for five rows set in the quincunx form.

F. C. SMITH,

COTTONWOOD, CHASE COUNTY.

A Small Farm, Well Cultivated.

ECONOMY NECESSARY.

In the beginning of my farming, economy was of the first importance. My success has been altogether due to a strict construction of that word. First, I found that hired help was of no benefit to a man in straightened circumstances, such as I was. Not because there were no good hands in the country, but from the fact that the abundance of cheap lands led men who would be profitable as hired help to obtain better employment for themselves by becoming their own employers. This left only the unprofitable ones to be employed.

MY AIM.

Secondly, how best to make my own labor profitable was a problem, and as cattle and horses require less labor, on account of an abundance of free pasturage, I decided to turn my labors to stock. Herein has been my success. I did not, like many men, go in debt for a stock of cattle to start with, but contented myself with two cows, purchased in 1871. I had also two small mares.

In 1873 I traded a little town property that I had for four more cows and another mare. I consider that the most profitable transaction of my life. Now I have forty-four head of first-class cattle, and eight head of horses.

TREATMENT OF CATTLE.

Kindness has been my universal rule in handling my stock, and, as a natural result, they are always satisfied to stay near home, having all been raised on the place and no strange cattle permitted among them. No extra labor is needed to keep them from straying or becoming breachy for want of care.

This treatment has saved me hundreds of dollars worth of labor in consequence, while nearly all my neighbors have lost by their cattle straying away long distances, often becoming breachy, thus entailing loss in hunting them, injury to cattle, and often the worst loss that can possibly befall a farmer, to wit: Money paid a lawyer.

A SMALL FARM, WELL MANAGED

I have only sixteen acres under the plow, but work it well, and having so few acres in cultivation I have not been compelled to mortgage to get seed to cultivate with. Some have said I did not "branch out" enough; but I have seen a good many men driven into bankruptcy in that way. I have done my farming in my own way, and for the benefit of myself and family.

GOOD FENCES.

The fence around my little farm is not of the very best, but the "eye of the master is always upon it," and a rail is never permitted to be long out of place. Whenever a set of bars are put up, they are not left in such a slipshod condition that the first brute that comes along will go through. When I feed I do not throw it all down in a heap, and let the strongest creature eat a little and spoil the remainder, so that the weaker animals either have to starve or forage for themselves, but I manage that all share alike and all are alike filled and contented. My objection to hired help is that they generally act as though they felt it beneath their dignity to go down into small details; or, in other words, they consider the looking after such small things as the result of stinginess. But since the looking after minor details has been profitable so far, I shall continue to do so.

H. G. POTTER,

BEULAH, CRAWFORD COUNTY.

A Stock Farm — Self-Feeding Corn Crib.

My farm is situated five miles south of Girard, on the Kansas Pacific, Fort Scott and Gulf railroad, and comprises four hundred and twenty acres, enclosed by fence, made of two boards at the bottom, and two wires above, fastened to wooden posts. For a hedge, Osage orange is planted, and in four, sometimes three years time, will turn cattle. Cultivating and mulching will hasten its growth, and when properly trimmed it makes a desirable and beautiful fence.

CATTLE AND HOGS.

Fattening and shipping beef and pork is my specialty. One hundred and sixty acres of the four hundred and twenty acres are sown to timothy and clover, which have done well; sixty more are to be put into blue grass the coming Spring. My arrangements for feeding large numbers of cattle with comparatively small expense are very complete. My yard is fenced by a high, tight fence. Just outside the yard are stacks of hay containing from one to two hundred tons, and a corn crib, self-feeder, holding a thousand bushels of corn stands in the center of the yard.

I believe the Durhams are the best stock for fattening purposes. Buy young stock and turn it into the fields. When it is ready for beef I ship to market, and buy again. Since last March I have shipped nine car loads of beef and pork. I raise but a small proportion of wheat.

Among the various breeds of hogs, for quick fattening and quick returns, I prefer the Poland China. Last year, one seventeen months Poland China weighed six hundred and forty pounds; and when looking over my stock I saw several of good size, though I had just shipped what I regarded as my

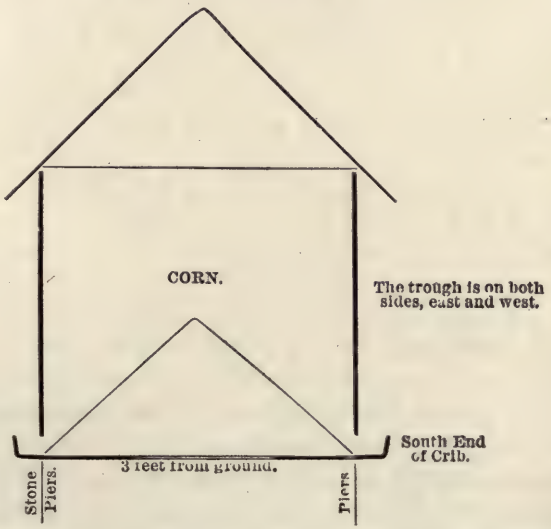
best. I had about forty and a few small ones in the yards. I also had two hundred head of cattle.

PERPETUAL FEEDER FOR STOCK.

This crib has wide feeding troughs on the two sides, just about high enough for cattle to feed in and help themselves to corn. If the corn does not fall in sufficient quantities of itself a slight touch of the hand will be sufficient. The corn that falls to the ground by the cattle, the porkers stand ready to catch; or if any is left in the troughs it is thrown out, and in this way both cattle and hogs have enough and plenty to fatten well without the carrying of hay or grain, and they are also sheltered from storms.

One man or boy is all the help I have.

SELF FEEDING CORN CRIB.



WATER.

I have an opening through the fence and stacks which leads out to the field and to a pond of water, which is constructed by building a dam across the ravine. It has nine feet of water, pure and clear, so that fish have found a home in it.

This is as cheap and effective a way of feeding and watering stock as can be devised. I think that similar ponds might be made for raising fish, though I have never given any attention to the matter. There are several of these artificial ponds in the county; two are in Girard, which are used as reservoirs for steam flour mills. They are durable and inexpensive.

The sub-soil is of clay. Tree planting around these ponds affords a comfortable shade and beautifies the landscape.

W. H. GILL,

LARNED, PAWNEE COUNTY.

Winter Wheat — Cost of Raising the Crop — Rye — Dairying — Climate and Advantages.

WINTER WHEAT.

This has been and is my main crop. Its average has been twenty bushels per acre, except the last year, when it was cut short by drouth. I have succeeded best on early plowing. I use sulky plows (sixteen inch), three horses or mules to the plow.

CULTIVATION.

I turn the ground up at least eight inches deep, and harrow down with a Thomas smoothing harrow. I always run the roller over right behind the harrow. This is done to thoroughly pulverize the ground and also to retain the moisture. I use drills for seeding, putting in only one bushel per acre. I have experimented with larger and smaller quantities, and find the best results from one bushel per acre. I commence sowing the 1st of September, and get done by the 25th, if possible. I use Hodge's Header for cutting; find it very durable. I cut from twenty to twenty-five acres per day. I stack the heads in long, narrow ricks, top the ricks up sharp, and hang them off with cords or small wire, with rocks or weights on their ends.

I have my own thresher, a three-horse endless chain power, and a No. 3 Westinghouse separator. With this I have repeatedly threshed 500 bushels per day.

WHAT IT COSTS TO RAISE WHEAT.

The cost of raising wheat is about as follows:

Plowing, per acre, - - - -	$1.25
Preparing ground, per acre, - - -	.75
Seed, " - - -	1.00
Cutting and stacking, " - - -	2.00
Threshing, " - - -	1.60
Total, - - - - - -	$6.60

Allowing 20 bushels per acre=33 cents.

I can hire the work done at above figures. Wheat has ranged from eighty cents to one dollar per bushel the five years I have been here. I raised and threshed the first wheat, rye, oats, and barley in the county.

RYE.

This grain succeeds well here. I prepare the ground as for wheat. It yields about twenty-five bushels per acre. When sown the 20th of August, it makes good Fall and Winter pasture. I have forty acres now furnishing excellent pasture for milch cows and calves.

BARLEY.

Barley yields from thirty to forty bushels per acre. Oats average from forty to seventy-five bushels per acre.

CARE OF STOCK.

My cows are grade, crossed with a Short-Horn bull. These cows make good milkers, and the steers make good beef. My cattle have sheds provided for stormy weather, though many large herds in this county are kept without any shelter, and their only feed is the buffalo grass which they get on the range.

THE DAIRY.

I use the Cooley creamers. They are just being introduced into this county, to the entire satisfaction of those using them. The creamer is a box in which is placed deep zinc cans.

The cans, when filled with milk, are submerged in water, which can be kept cool in Summer and warm in Winter; that is, above freezing point. Cream rises readily in twelve hours.

POULTRY.

Poultry does well here. The chicken I like best is a cross of the Brown Leghorn and common fowl. They make good layers, and are good for table use. My hen house is a sod building, fourteen by twenty feet, covered with coarse prairie hay. This is a warm house for their Winter use, and cool for Summer. I ship my surplus butter, eggs, and dressed poultry to the mining regions of Colorado, where they command a good price.

SOIL.

The land here does not need draining, as it does in the Eastern States. It is of a dark, deep, and somewhat sandy nature. Water is absorbed or taken in readily, the sub-soil being of a porous nature. I am seldom troubled by surface water. The land is prairie, slightly undulating, and retains moisture well. It is easily subdued from its wild state. Good wells are abundant. I have two wells, one seventeen, the other nineteen feet deep. They afford plenty of water for all purposes. I have never known a well to fail in this country.

THE CLIMATE.

Extreme heat or cold is never of long duration here. Our Winters are short and moderate. I know of no country where a beginner can start in the world more easily, or with more certainty of success than in Southwestern Kansas, any where along the great Arkansas Valley. Homesteads are still to be had here, and improved land sells from four to twelve dollars per acre. I was raised in Central Ohio. Lived thirty years in Southeastern Iowa, and during the late war I traveled over most of the Southern States, but have never found a more desirable place to live in, or one that suited me so well as Southwestern Kansas.

JAMES SCHOFIELD.

GIRARD, CRAWFORD COUNTY.

A Sheep Farm — Durham Cattle — Fuel — Fruit — Corn Culture.

My farm contains three hundred and twenty acres, and may be considered a fair specimen of mixed farming. It is fenced with hedge, although some of it is too young to turn stock. The land is rolling prairie, and there is a pond of water affording water for stock the greater part of the year. I have a splendid spring of living water, which has never failed in the dryest weather.

SHEEP MY SPECIALTY.

My specialty among stock is the breeding of sheep, and I make it a point to secure the best grades of all kinds, both in sheep, cattle, and hogs. I think there is no stock so profitable for both wool and mutton as the Cotswold. They require a change of feed and of pasture, and must be kept on high, dry lands. River bottoms will not do. My plan is to feed my sheep corn fodder, oats, and hay. They should not be kept in too large bodies, for they do much better in small flocks of about one hundred. I have two hundred and twenty; about one-half are full bloods that cost me eight dollars per head. Last Spring I clipped from them about eleven pounds of wool apiece, which I sold at twenty-three cents, as wool was very low then. I can not give as full particulars about the profit of sheep-raising as I would like to, not having been in the business long enough to speak for certainty as to what results could be attained. It is my opinion, however, that sheep-raising can be made quite profitable in Kansas. I have specimens of wool from the Cotswold that were as fine as any ever seen, its length being from five to eleven inches, or an average of eight inches.

CATTLE-RAISING.

Now, in regard to cattle-raising, I think the Short-Horned

Durham the best for beef, and the graded stock best for milk. I should say as to both, however, that the Short-Horns are the most profitable.

SHEEP SHEDS.

My yards are provided with sheds, a part of which have thatched roofs, as sheep require more shelter than other stock.

AN ORCHARD STARTED.

I started a fine orchard of four hundred trees, two hundred apple, one hundred peach, the remainder being cherries, pears, and quince. The apple and peach trees are remarkably thrifty. My peaches are, many of them, seedlings, and are particularly fine. One variety of large yellow planted, has reproduced its kind, or strongly resembling it, as was shown by a few specimens grown the fourth year.

COAL.

The fuel used throughout southeastern Kansas is coal, of an excellent quality, and found in large quantities. It is drawn from coal banks eight or nine miles away, and is delivered at our door in Girard for seven cents per bushel, being about one dollar and fifty cents per ton. In severe weather it occasionally advances to two dollars per ton, which is certainly far better than the southwestern counties fare, for it comes to them at a cost of twenty dollars per ton. In looking for a home, this saving in the cost of fuel is certainly a great item.

TIMBER.

Timber is scarce, except on the streams, and much attention has been paid to tree planting. Many varieties grow rapidly, and now that fires are not allowed to run over the prairies, it will not take many years to have young, thrifty trees, for ornament and for use as well. The poplars are often planted for wind-breaks. Locust, walnut, soft maple, catalpa, and evergreens, are set out for use and beauty.

The rainfall is greater where timber is grown, as experience has plainly taught us. Wild cherries and plums, and in some places willow and sycamore, and a few hard maples, have

been planted. Below us, in the Indian country, and Arkansas, are extensive pine regions, and various other evergreens. This supply will eventually result in cheapening lumber.

GRAPE-GROWING.

Grapes can be made wonderfully productive and profitable. Many varieties have been tried here. The Hartford Prolific, Concord (the Concord is surest), Isabella, Catawba, Agawam, and the sweet and delicious Dracut Amber, with very little protection, can be well grown.

OTHER GROWTHS.

Broom-corn is grown with great success, and from the sorghum or sugar-cane some sirups of excellent qualities have been made; castor beans, which ought to be kept here and manufactured, are shipped away to manufacture; flax culture is not carried on as it should be, being only raised for seed, while the fiber is used for thatching sheds. Cattle will eat flax straw for the sake of the seed left when threshed, but in the face of this fact, ton upon ton is left rotting on the threshing ground. Capital could remedy all this, so that factories would grow among us. Silk, too, has been tried with success, and beautiful specimens have been shown at county fairs. Cotton and tobacco are raised with some success, the latter for home consumption.

MANNER OF PLANTING CORN.

To speak of the manner of growing corn will, perhaps, be too old a subject, but to Eastern new comers it may be helpful. Plow deep and in the Fall, both for corn and potatoes, to insure early crops. Harrow thoroughly in Spring. After harrowing till the ground is soft and mellow, mark the fields both ways, and plant corn either by a hand planter, or by riding a double planter. This last is frequently done by boys, and sometimes one girl will drive, while another one works the lever for planting. Plant rather thickly. When the corn is up so that you can see the rows both ways, put in your lighter harrow again. This harrowing destroys the first crop of weeds. Soon after, go over the same way, so as to kill a second crop of weeds.

When gone over this way it may now and then pull up a stalk or so, but no harm will be done; on the contrary, the corn will grow the better. After it reaches six or eight inches in hight, take a walking or riding cultivator and go over it three times; by that time it will be too high for the two-horse cultivator, and if it should still be weedy, go over with a one-horse cultivator, as the crop will stand drouth well and ear better. Farmers are fully paid who cultivate their fields of corn well. Your work pays better, because you can feed your stock better. It is the experience of farmers in southeastern Kansas, that the corn crop thoroughly worked results favorably every season. If Fall plowing can not be done, owing to bad weather, plow at the earliest moment in Spring, and let lie awhile before harrowing and planting. Wheat is always best when sown in well-prepared ground, about the first of September.

I. HODGINS,

CENTRALIA, NEMAHA COUNTY.

How to raise Stock — Hay-rack — Feeding Stock — Dairying — Sheep — Sheep-rack.

Nemaha county farmers adopt as the most remunerative branches of farming, the raising of stock, fattening of cattle and hogs for Eastern markets, and dairying. Any process that will convert to use the rich and abundant pasturage furnished by these broad prairies, and also use to the best advantage our large crops of corn and other grains, is the end most eagerly sought. The production of meat is especially remunerative when properly conducted.

HOW TO RAISE STOCK.

The usual plan pursued here is to select a location that has good water. Enclose the stock yard with a tight board fence, and furnish it also with sheds, hay-rack and feed-

ing boxes. There should also be a row of sleeping pens for hogs, made ten feet square or a little less, with open entrances. This will prevent their huddling together in large masses to sleep, in cold nights, and consequently from cooling off too quickly in the morning, thereby causing lung-fever and death. The feeding boxes should be made ten feet long, six feet wide, and eight inches deep, and should stand on legs that are two and a half feet high. No matter how many cracks or holes there may be in them, as it is the hogs' business to pick up all the corn that drops. There should be one of these boxes for every eight head of cattle.

A GOOD HAY RACK.

I made a good hay-rack, which has stood for several years, in this manner: I took rails ten feet long, and some large wire. Made the rack four feet wide at the bottom, seven feet wide at the top, and over one hundred feet long. I set a center row of rails in the ground eight feet apart, lay a rail on the ground crosswise close to each and wire; another rail in the middle, one foot from the top of the upright. I stand up two cross-rails thus × for braces, and two more rails for corners, four feet apart at the bottom, and seven feet at the top. This represents the end of each section of eight feet.

Now lay a rail lengthwise on the cross-rail on the ground, and another one on the top cross-rail, and also one in the forks where the brace crosses the upright. This should be about two and a half feet from the ground. Then stand up rails on the inside, two feet apart. Wire them fast in three places. Extend it any desired length. Wire every intersection, and it will stand as long as the timber lasts. Feed steers that are two and three years old, and hogs of all ages.

FEEDING STOCK.

Farmers here feed from twenty-five to two hundred and fifty steers and an equal number of hogs together. Feed lightly at first, and after they are accustomed to it, always keep corn in the ear in the boxes. Don't neglect to keep salt and ashes where cattle and hogs can have access to it, and also

coal for the hogs. Money that has been invested in stock and feed may be nearly doubled in six months.

THE DAIRYING INTEREST.

This interest is quite largely represented in this county. We have three cheese factories—two in Centralia and one in Oneida, both working on the co-operative plan, and producing in the aggregate about 350,000 pounds of cheese annually. Butter in large quantities is shipped to the Eastern markets at all points, on both of our railroads. Here let me say to you, brother farmers, who have not the best facilities for making butter, that you may improve the quality of that product very much, by skimming off the cream as soon as the milk changes. Keep the cream in a tin cooler made about eight inches in diameter, and deep enough to hold a sufficient quantity for one churning. Hang the cooler in the well until the cream is wanted for churning, and on this plan, taking the greatest possible care to be cleanly in every operation, your butter may be brought fully up to the first grade. It has been proven that the native grasses of the prairies will make cheese and butter equal in quality to any of the tame grasses.

SHEEP RAISING BECOMING POPULAR.

Sheep husbandry is rapidly growing in favor here, and is a sure and safe-paying business. The climate and herbage are particularly well adapted to the health of sheep. A neighbor of mine who keeps a few hundred, is well satisfied that the investment is quite profitable, and the old adage has proved very true in his case "that sheep's feet make golden tracks." The Cotswold is the breed preferred, and I think their various good qualities are hard to beat.

A SHEEP BARN.

The following plan is a good one for sheep barns or sheds: The rack is on the inside of the wall of the building with the bottom close to the wall while the top slants in, and is four feet from the wall. It is supplied with hay through a long door which opens on the outside, even with the top of the rack,

against blocks which hold it at an angle of about forty-five degrees. This position conducts the hay well into the rack, but if the building has a hay-loft, the hay may be supplied through a perpendicular opening down the side of the building. Another door below opens the same way into the feed-boxes, and permits the boxes to be cleaned with greater ease, and conveys the grain more readily into them. Be assured that it pays to feed all domestic animals well.

D. W. KINGSLEY,

INDEPENDENCE, MONTGOMERY COUNTY.

Castor Beans — Broom Corn.

I have paid considerable attention to the cultivation of castor beans, broom corn, and flax. I find the castor beans the most profitable, because the crop may be gathered by such help upon the farm as is not considered able to do a full day's work at the ordinary farm labor.

WHEN TO PLANT.

I plant the castor beans as early in the Spring as the seed can be put in the ground. I prepare the ground in the same way I would for corn, and plant about the same distance each way. More care is necessary to get the rows straight. I plant with a corn planter, but a more uniform stand is obtained by hand, covering about an inch deep some two or three grains in a hill. When the plants are well started — about six inches high — I thin to one stalk in a hill. The cultivation must be thorough enough to keep the ground free from weeds. I have a friend who has made a specialty of raising castor beans and broom corn, and he plants his beans in November. He was led to adopt that plan by seeing the beans that had dropped from the pods come up so finely next season. This volunteer crop is earlier and more vigorous than that planted in the

Spring. This same gentleman also plants Early Rose potatoes in the Fall and gets potatoes twenty days earlier than by the earliest Spring planting. He also plants black seed onions in the Fall and Winter.

It is important to have castor beans planted early, so as to insure a long maturing season, as they will continue to ripen generally until the frost comes. The gathering commenced in 1879 in July.

SECURING THE CROP.

All the preparations for gathering must be made before the crop begins to ripen. The floor or bed to spread the spikes upon may be made by scraping perfectly smooth a piece of ground about six to eight square rods for every ten acres planted, leaving a wall of sod or dirt about two or three feet high, to keep the beans from flying off and wasting. This floor should be free from gravel, as that will work up in sweeping. If the floor is near the field, it is very convenient to gather the crop on a sled, with a long and high box, narrow enough to pass between the rows. One horse can draw such a sled. If the floor is not near enough to be convenient to use a sled, the two-horse wagon may be used by driving over the ninth row, and gathering four rows on each side. At each picking I always drive over the same row, in the same direction. In gathering, only those spikes are to be cut that have some of the pods cracked open. If they are cut too green the pods will dry up without opening, but if left too long the pods will open and drop their kernels. These are to be spread upon the floor thinly enough to permit the sun to open the pods and let the grains out. This work may be hastened by stirring them with a rake. No threshing is necessary. When the pods have all burst open, the stems must be raked out, the gathering swept up, and the beans separated from the hulls in a fanning mill. If the mill is so arranged that the beans may come out at the side in a spout, it is better than to come down behind the mill. When thus cleaned, they are ready for market. Great care should be taken that none of

the beans are left where they will get into the feed of horses or cattle.

CASTOR BEANS AS FERTILIZERS.

One great advantage in raising castor beans is the effect the crop has upon the land as a fertilizer. It seems to be almost equal to a crop of clover. Some think the good effects produced are by the action of the plant in neutralizing the acids of the soil, so that crops that follow may utilize those properties of the soil that otherwise would be locked up and unavailable. Others think that the plant draws largely upon the elements of the air, and by so doing attracts and gathers into the soil and lays up for future use those elements necessary for plant food. Whatever may be the cause, the result is certainly favorable. I have, in sowing wheat or flax on ground where wheat and castor beans had been grown, seen a marked difference as soon as the wheat came up, and the difference was more perceptible as the season advanced, until the harvest.

YIELD PER ACRE.

The yield per acre will be in proportion to the fertility of the soil. On medium upland, eight to twelve bushels per acre is considered a fair crop; but there have been some crops on bottom land reported as yielding twenty to thirty bushels per acre. Prices have ranged from seventy cents to one dollar and ten cents, in the years 1878 and 1879.

BROOM CORN.

One of the advantages of raising broom corn is that it utilizes the newly broken prairie sod, as it proves a very good crop on sod without any cultivation, no labor being needed, except to plant and harvest. The yield is better on good, well prepared soil, but even on sod the crop is sometimes remunerative enough to pay for the same area of land on a good farm. The principal obstacle to overcome is the lack of shed room in which to cure the brush.

Planting should be about the same time that corn is planted, in rows three to four feet apart, the hills being every one to two feet in the row, with five to eight seeds in each. If old ground

is used, more seed should be planted, which must be covered slightly, and, when started, thinned to about eight stalks in a hill. A thorough cultivation facilitates a rank growth and early maturity. If the ground is foul I do some hand hoeing. Plenty of shed room should be supplied before the harvesting begins, and scaffolding prepared, so that the harvesting may not be interrupted. I sometimes prepare store room by nailing strips of lath on any boards, poles, or rails, about six inches apart, in the form of a ladder, and then stand the ladders up so as to make a wall of them. I then put laths across to lay the brush on, after it is cleaned. If properly put away, two thousand cubic feet will be room enough to cure a ton of brush. In the climate of southern Kansas, the same room may be used for several lots of brush, and if taken at the right time and cured in the shade, an article may be prepared that will go into the market East of first quality. Most of the harvesting can be done in August and September.

CUTTING THE CORN.

I begin cutting as soon as the seed is fairly formed, unless the seed is an object for feed. The main part of the crop I take off by cutting about six inches below the brush, and drawing right to the scraping machine. I scrape off seed immediately, and the brush I put upon the racks about four to six inches thick to dry, while it is perfectly green. I thus secure a beautiful pea green, and the hurl is pliable, lasts well, and is sought for in the market.

HOW TO MAKE A SCRAPER.

I make a scraper by encasing a common cylinder of a threshing machine with narrow stuff two inches thick, filled with wrought spikes or nails, and mounting it on a frame so as to revolve from the feeder. A rest must be secured to protect the feeder's hands. This may be run by any power sufficient to run it. There is machinery prepared expressly for scraping broom corn, which can be driven by a small power, or even a windmill, and the same power may be used for other purposes, such as shelling and grinding corn, and sawing wood.

Any good hay press may be used that will leave the bales in good shape to pack in a car, if it is wished. In some markets the tall corn is most preferred, but in Southern Kansas it grows so rank that it is too coarse. I sold one lot of broom corn to a home manufacturer, and some of the brush was two and a half and three feet long. The dwarf broom corn makes a better brush, for it is finer. There are quite a number of men in our county who make up their own broom corn or hire it done, and exchange it for goods.

JAMES C. MARSHALL,

LA CYGNE, LINN COUNTY.

Grain — Cattle — Hogs — Stone — Osage Hedge — Sulky Plows.

I believe there is no cheaper way of manuring land than to grow the fertilizers on the ground where they are needed. In order to do this I raise but two crops in three years.

Wheat stubble, with the growth of weeds, should be turned under deeply in the Fall or Winter, for corn. Corn stalks, with the early growth of weeds, should also be plowed under, from the middle of June to the middle of July, for wheat.

After a trial of from ten to twelve years, I find my land instead of growing poor by cultivation, gets better. The same system will answer for any crop. Some people forget Franklin's maxim, "always taking out of the meal chest and never putting in, will, sooner or later, bring us to the bottom." This is as true of the land as of the meal chest.

GRAIN.

Corn and wheat are our two great staples. Flax does well here, but until some way of utilizing the straw can be found, it does not pay as well as other crops. One of our great wants is a paper mill to use the flax straw, the Indian mallows

which grow without being desired, the refuse of our sorghum mills, and whatever else is found. An oil mill would save us freight on the growing seed and the returning oils.

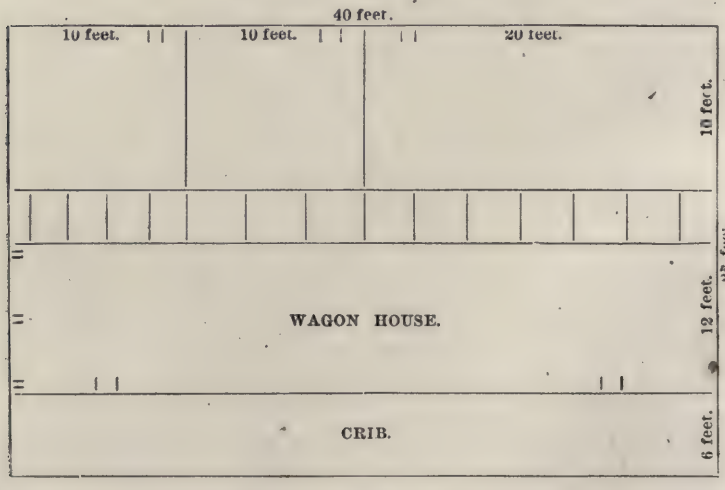
I am trying persimmons, on a small scale, and if the Japan persimmon will stand our climate, it will be an acquisition.

CATTLE.

I feed fat cattle each Winter, and it is more remunerative than selling the corn. The self-feeding cribs are coming into use and save a deal of labor. A dozen or twenty head of steers, with good shelter for them, is a better market for corn than Chicago or St. Louis.

The Short-Horns are my favorites. They can turn more wild grass into beef and tallow than any others that I have tried; but the Jerseys are beginning to be appreciated in cities and towns, as giving larger quantities of cream and butter in return for what they eat, than the beef breeds.

PLAN OF HOG PEN.



HOGS.

I feed few hogs, except those that follow the cattle, and have good dry and sheltered places for their sleeping quarters.

Large and small hogs should be fed separately, and they should also sleep separately. I have their pens cleaned every day, and furnish all the clean water they can drink. I do not blame some hogs for dying with cholera.

I have no poor breeds of hogs. The old land sharks have left us, and the Berkshires are driving out all other breeds.

A pen for hogs should be built in connection with the wagon house and corn crib. The advantages are that you can always feed in a dry place, there is a place for barrels for swill, the pens can be cleaned in bad weather, the pens will be dry, and the hogs will have plenty of air. The doors out of the pens should open into different lots. If necessary, feed can be cooked in the building or near it. It is but little trouble to have troughs that can be turned over from feed room. A partial floor can be made over pens, where farming tools will be better off than out in the weather. The floor should slant sufficiently to keep it dry.

STONE.

We have an abundance of all kinds of stone, common limestone, magnesian limestone and sandstone in all parts of our country. Where it is convenient, it is the best and cheapest fence a man can make, for when it is once up it is finished, while the hedge fence continually requires work.

HEDGES.

For a good hedge plant I want something that does not grow as tall as the Osage orange. All high growing plants will drop their lower limbs, rendering the hedge open at the bottom, where it should be the thickest.

SULKY PLOWS.

I use a sulky plow. It is excellent, as it enables me to plow deeper, to turn under more rubbish, and utilizes more horse power; so that when my day's work is done I can find time for work in the garden.

In this section farmers generally are more alive to the benefits of late Fall and Winter plowing than formerly. A

deep interest is felt in sugar making from sorghum. A few experiments were tried last year, but were only partially successful. There will be a small army in the field this year, but many will fail for want of proper appliances.

W. J. F. HARDEN,

HARTFORD, LYON COUNTY.

Potatoes — Grapes — Small Fruits — Cherries — Apples — Wheat — Corn and Millet — Barn — Stock.

My farm consists of forty acres. I have a road on my north line, a road from the house to the barn, and one from the stock yard to the main road. The roads are fifty feet wide. I have subdivided my farm into three fields. The first, of ten acres, contains house, barn, garden, vineyard, and orchard, the house, garden, and vineyard, occupying three-fourths of an acre.

POTATOES.

I make no pretensions at selling any thing from the garden. But potatoes, being one of my principal crops, I raise by themselves. I usually plant three or four acres. I plant in hills three feet apart each way, two or three pieces in each hill, or eight to twelve inches apart in drills, four to six inches deep. I harrow the ground thoroughly both ways, before the potatoes come up, and then keep them clean. I frequently plow after the potatoes are large as hens' eggs.

Average price of early Vermont and Rose, seventy-five cents per bushel; Peachblows, ninety-two cents. Potatoes can be raised at a profit for fifty cents per bushel. The most profitable are Early Rose, Peerless, and Peachblow, the latter a favorite. I find it better to sell at digging time, as the shrinkage is fully thirty-three per cent. if kept until late planting or the June market. I have planted as many as nine acres in one season, and have raised three crops.

I plant early in March and April as the season will

allow. I harrow just before they come up, and cultivate to keep clean. I lay by with cultivator, and dig with a two-horse plow. Strike a furrow on each side of the row, and then throw out the potatoes with another furrow. By skipping a few rows and working two lands at a time, all hands can work to better advantage.

VINEYARD.

My vineyard is on bottom land. The soil is a light clay loam. I have my vines planted eight feet apart each way, and trained to a trellis. My surplus crop in 1878, from sixty bearing vines, was about nine hundred pounds; sold at six cents a pound. My varieties are Concord and Dracut Amber. The latter I sold grapes from on the 26th of June. The crop of 1879 was injured by the late frost, and I sold less than one hundred pounds. I have let my vines sucker more than I ought this year, perhaps, but I want to start them out in better shape by encouraging a large growth of wood.

CHERRIES.

I have fifty trees in bearing, the early May or Richmond and the common Morello being my favorites. Of the crop of 1878, I sold two hundred quarts, at eight cents a quart. The crop of 1879 was light. My trees are mostly planted twelve feet apart; some twenty-four feet, which make the best yield. Some trees near the house have yielded over one bushel each.

BLACKBERRIES.

I have the Lawton and Kittatiny. I planted them out and allowed them to run wild. They are too crowded, and I shall thin them out and set in rows eight feet wide. I sold in 1878, 122 quarts, at eighteen cents a quart. In 1879 they were Winter-killed to the ground.

PEACHES.

My orchard contains two hundred trees, which have generally brought me in more easy money than any thing else. My sales for 1878 were $103.50. The fruit I put up in a third of a bushel crate, and hauled fifteen miles to market. Yet

strong competition sold them at an average price of $1 per bushel. The varieties are Stump the World and Old Nixon freestone. The peculiar feature of this growth is, that it was raised from budded fruit and sold as seedling fruit on its merits. The trees were planted twelve feet apart each way. Sixteen feet would be a better distance.

APPLES.

My orchard consists of 136 trees, planted twenty-eight feet apart each way. It has just commenced to bear, but not sufficiently to market the fruit. There are orchards here, planted twenty years ago, twenty-four feet by twenty-eight, whose branches touch now. I let my hogs run in the orchard, and am feeding them there at this time, and have not noticed any damage done yet.

HORSES AND COWS.

I keep three horses to do the work, and for pleasure. My wagon bed I have set on heavy half springs, which hold up anything I want to haul. I keep cows enough to supply me with butter and milk, and have some surplus. I keep geese and chickens, and my sales of poultry at times is considerable.

FENCING.

My fences consist of hedge (Osage orange) set eight inches apart, trimmed several years, and finally splashed, cut, and laid flat, with rails piled on to hold down until grown together; then trimmed to three feet wide, and kept at four and one-half feet high. This is pig-tight, and horse and bull strong. I have a board fence made with from four to six boards, and the orchard fences are of four and six inch pine boards, twelve to sixteen feet long, with short posts, made from rails cut in two in the center. These answer every purpose, and make a good hog fence.

WHEAT.

I have raised three crops of wheat. Two of Spring, averaging eleven bushels per acre, and one of Winter, averaging thirteen bushels per acre. I sowed once and the grasshoppers

walked away with it. I always raise from forty to sixty bushels of oats per acre when I sow them, but have substituted millet as more profitable. I confess that my wheat cost one dollar per bushel to raise it; and last year thirteen bushels of peaches brought me twenty bushels of choice wheat. Oats were only worth ten to twelve and a half cents per bushel, and wheat sixty-five cents, a poor return surely for one's labor.

CORN AND MILLET.

I have another field containing twenty acres, sixteen acres in corn and four acres in German or pearl millet. The corn is making fifty bushels to the acre, and will average even better than that. I am feeding it to fifty head of stock hogs of my own raising. The millet I had cut and bound with a harvester for one dollar and a half per acre; it yields forty bushels of seed per acre. I stacked it, and it kept nicely. I expect to get enough for the straw (having abundance of other feed) to pay for threshing it, and sell the seed.

GOOD WATER.

Next we come to the last field of ten acres, two acres of which is water and timber; a stream from two to four rods wide, and one to five feet deep, runs through it, with a good wagon-road crossing at the most convenient point. There I raise my potatoes, and this season I have five acres of corn there. The corn I cut up twelve hills square, as the most convenient size, and will feed to stock cattle and horses.

HOG SHED.

A shed for hogs is built with hay roof, by putting in forks and stout poles with rails and brush for covering. The floor can be dispensed with by filling up with clay, or gravel and earth. Hogs should be kept dry and clean, and not be crowded. This pen can be enlarged by taking out partition; doors fasten with hook and staples.

A CONVENIENT BARN.

My barn was built this season, with stone basement, fourteen by twenty, laid up in mortar, and eight feet high to

sills. I did the work myself at odd times during the Fall. The superstructure, the center post of which is twelve feet high, has ample room for the storage of grain and hay. The drive-way is nine feet wide; doors are eight feet square, on roller hinges; the crib is eight feet wide, eight feet high, and twenty feet long; building twenty by thirty-one feet in all. Two doors are in the basement on the north side, two and one-half by three feet, and an inside drive-way to feed through, with a window same size in each end for light and air. Double doors for same purpose in front are three and one-half feet wide. The basement contains room for four stalls, and a pen for sows and young pigs, five by twelve feet, which are a great convenience, as I am engaged in breeding Berkshire swine, and raise from fifty to one hundred pigs each season.

IOWA.

I. C. CURRIER,

SALIX, WOODBURY COUNTY.

The Opening of a Stock Farm — Cost of Breaking and the First Crop — How to Feed Cattle — Profit of Sheep — Hogs.

LAKEPORT STOCK FARM.

My farm is situated one-half mile from Salix, and fifteen miles from Sioux City, on the main road to the latter place. I have three hundred and twenty acres of land, lying on the Missouri bottom. Farmers who have been here twenty years, say that they can raise as good corn as ever, and the land has never had a spoonful of manure. Considerable of the ground is too low to cultivate, but makes good mow-land, and an excellent range for stock. The water is good and the climate healthy.

The banks of the Missouri are covered with timber, such as cottonwood, bass, ash, hackberry, elm, maple, etc. Cottonwood lumber is worth ten dollars per thousand; cordwood two dollars a cord delivered. There is a good market here for our productions, as they go both North and East.

BUILDINGS.

My corn barn is forty feet long and twenty-six wide. There are two bins, eight feet wide, one on each side of the wagon-shed, which is ten feet wide. Over the wagon-shed there is a floor made by running joists from one bin to the other, which makes a large place to store farm machinery, and for a general store-house. I have windows on the outside to shovel in the corn. The corn barn can be so constructed that one can drive through the center, but in this case there can be no room over the wagon-shed.

I make my cattle sheds fourteen feet wide. I take cedar posts and set them two feet in the ground and eight feet out

of it. I set a post every fourteen feet, board with pine boards (ship lap), and shingle. These make good sheds and are not very expensive. In one of my sheds I have a place to tie up eight cows. I let my calves do the milking, excepting what I want for family use.

I have not yet built my horse barn, but have selected its location. Having been here but a year and a half, I have not had time to do all the building I intend. For the present, I employ a building forty-two feet long by twelve feet wide, for horse barn, hog, and hen house. I take one-half the building for horses, having two double and two single stalls, where I can keep six horses. In a third quarter of the building, I have places to tie up five colts, and in the fourth, are two large pens for breeding sows, over which is my hen house.

For a farmer who has not very much money, and does not keep much stock, I think this building can not be beat. It is made the same as the cattle sheds, only that it is boarded all around, while the sheds are open in front. When my horse barn is built, I shall use this building for a hog house. I shall have a walk through on one side, and pens for breeding sows. From each pen, there will be yards outside.

WATER.

I have a windmill with ten foot wheel, which pumps the water for house and stock. I have a drive well and a force pump. I have simply to turn a faucet in the house, and if there is any wind, the mill pumps, and I get my water as conveniently as if I were in the city. In the center of the yards I have a round tank; and in my hog pasture I have three barrels. In one of the barrels I have a float, and it is so arranged that when any water is drank out of the other two barrels, they will fill up again out of the tank, and as soon as any water leaves the tank (which has a float) the mill will begin pumping and fill it just so full, then by means of the float the mill is put out of gear.

FARM IMPLEMENTS.

Among farm implements, I use Avery's sulky plow, the

Wilcox harrow, Gorham's sulky cultivator, the Union corn-planter, with drilling attachment, the Buckeye mower, and Tiger riding horse-rake.

FIRST CORN CROP.

My land was broken in the Summer of 1878 at a cost of one dollar and seventy-five cents per acre. In the Fall and the next Spring, I turned it back, which was worth one dollar and fifty cents per acre. I harrowed the ground three times — twice before planting, and once after the corn was up, — and cultivated it three times. The harrowing, planting and cultivating would be worth seventy-five cents an acre, and the husking two cents a bushel. Seventy-five bushels to the acre, husking would be worth one dollar and fifty cents per acre, making a total expense for production, per acre, of five dollars and fifty cents, or seven and one-third cents per bushel.

RESULTS.

I paid ten dollars an acre for my land, and have eighty acres in corn. This eighty acres cost eight hundred dollars. I calculate that I have raised seventy-five bushels an acre on an average, or six thousand bushels on the eighty acres. At twenty-five cents a bushel (the market price) this gives fifteen hundred dollars. Deducting four hundred and forty dollars, the cost of production, and eight hundred dollars, cost of my land, I find a remainder of two hundred and fifty dollars, besides the corn stalks, which are worth fifty dollars for my stock.

STOCK.

I convert my corn into beef and pork, which brings me fifty cents a bushel for my corn. This is a stock country, and I consider the Short-Horn cattle the best. My cows are mostly grades, and I have some full bloods. I use a pedigree Short-Horn bull with all my cows.

HOW TO FEED.

I believe it to be the best way to feed steers and keep them growing from the time they are dropped till they are

coming two years old. I think keeping steers until they are four years old, and then feeding them, as some farmers do, will be a thing of the past in a few years.

HORSES.

In regard to horses, I consider a twelve hundred pound horse, or thereabout, the horse for general farm work. My mares weigh about one thousand pounds each, and I put them to a horse weighing fourteen or fifteen hundred pounds, thereby obtaining a horse that will do either farm work or driving.

SHEEP.

I consider sheep raising the most profitable business a man can enter into. In 1879, I made about one hundred per cent. on mine, with graded ewes and Cotswold buck.

HOGS.

In hogs, I have had the greatest success by crossing Berkshires and Poland Chinas.

E. T. BROCKWAY,

AINSWORTH, WASHINGTON COUNTY.

Landscape Gardening — Hedges, Evergreens — Stock Hogs, and Their Management — Artichokes — Hay Stacker.

PINE GROVE FARM.

I do not claim to own a model farm, or to be capable of making or possibly even managing one, but I do claim that mine is the best I could make by thirteen and a half years toiling with hand and brain, at the same time having to strive hard to keep the wolf from the door, pay my debts, school my children, and provide my family with the necessary comforts of life. I have always thought that if there is a place on earth where a man should see real, unalloyed pleasure, it is at his own fireside. Here, surrounded by wife and children,

he should at night leave the cares of the day outside. They are easily found in the morning again and are made less hard to bear by being dismissed for the night.

LOCATION.

In choosing a location for a home, after I had selected one where schools and society were attainable, my object was to secure land adapted to raising hogs and cattle. The place I found that best answered my wants, was situated in the great corn belt west of the Mississippi river, in Washington Co., Iowa, near the thriving little town of Ainsworth. Here corn, clover, timothy and blue grass grow to perfection, and by reserving a field of blue grass for Winter use, I find that stock of all kinds can make a good living in the fields during mild Winter weather.

Pine Grove Farm consists of four hundred acres and is one and a quarter miles long, north and south, and a half mile wide, with a road on the west and north. A small stream runs across the south end near the line, and all parts of the farm are supplied with living water by under drains. In selecting a point to build, I chose the highest location on the farm, with a view to health, and also to avoid the danger from frosts injuring fruit. I began here thirteen years ago. I had made one farm before, and endeavored to profit by the mistakes which I then made. I selected the building site midway on the west side, with the front of the house facing west. I allowed about two and a half acres for lawn, and erected the house about fifteen rods from the road. I sub-soiled the entire lawn, orchard and garden lot, then planted the lawn to such rare and beautiful evergreens and deciduous trees as were suited to the climate. The greater portion of them were evergreens.

LANDSCAPE GARDENING.

I had made landscape gardening something of a study, and tried to profit by the plans and teachings of A. J. Downing. I planted my evergreens sometimes in groups and sometimes singly, giving them a chance to display their beautiful outlines; my aim being to plant so that there would be an opening

among the trees where sunshine would linger until driven away by the approaching shades of night.

THE ORCHARD

lies north of the house, and the fruit garden lies east. Both are protected west, north, and east, by a triple row of white pine trees, now twenty to twenty-five feet high. East of the pine belt there is an Osage hedge. Still east of the hedge stands a grove of some two acres of maple, which are thirty feet high. North of the orchard and pine belt is a piece of timber, consisting of maple, willow, larch, pine of various kinds, and spruce.

TREES AND HEDGES.

The farm is fenced principally with Osage hedge. I have planted larches in the hedge along the road on the west line, which are each twenty feet high. There is a belt of maples on the inside of the hedge north of the house, extending a little over a mile, one along the north side, and one across the farm from east to west, near the middle, making in all some 20,000 trees. Three thousand of these are evergreens and European larch. The remainder of my trees are white maple, with some poplar, black walnut, butternut, birch, cottonwood, elm, ash, sycamore, etc. My idea of planting European larch in the roadside hedges, was to create a pleasing effect, and should the hedge die out, the trees would answer the purpose of posts to fasten wire to, and in time would become valuable as timber. I do not think they will materially injure the hedge, as I have seen several cases where large maples and cottonwoods have stood in hedges without doing the latter any apparent injury. I intend at some future time to plant a few acres of European larch, also of ash, catalpa, and black walnut, believing that they will prove valuable property. Should I or my children not reap the benefit, some other man's children may. When I first settled on the land the only trees on the place were a few scrubby hickories on the southeast corner. This grove is near one of the artificial lakes which I have made. I have carefully

protected the young hickories, and trimmed them. This will soon be a beautiful and valuable grove.

THE PINES.

Though we have been here but a short time, the pines tower above the house, though the dwelling is quite a tall building. The fierce winds are effectually held at bay through their agency. In the long Summer these pines scent the air with their balsamic odor, throwing their long, dark shadows on the dewy grass at night. But in the Winter their real value is seen most plainly. When the fierce winds howl through the darkness like angry wolves, the dark pines and cedars seem to say, "Halt! ye winds." Then when the cold, wintry days come, the north winds roar among the naked maple limbs and bend them like grass, but the sturdy pines stand like a protecting wall, while the cattle in the lee of them are the picture of content and comfort. And gently the beautiful snow comes down and the master and his stock sleep in peace, while the good sentinels of pine and cedar, fir and spruce, stand guard.

EVERGREENS.

I buy my evergreens by the thousand of some nurseryman, usually at a cost of about $10 per thousand, when a foot high. They reach me moist and in good order. I keep the roots wet until I am ready to set them out in nursery rows, where I cultivate them four years, and then plant where I wish them to remain. I lose no greater proportion of them than I would of cottonwood or maple, by transplanting. All I find necessary to success is to keep the roots from becoming the least dry for even a moment.

Were I to make a thousand farms I would plant at least a thousand evergreens on each farm, and should I wish to sell any one of the farms ten years later, I would receive ten dollars for every one dollar which I had spent for evergreens. Were any one to ask me what kind I prefer, I would answer that I like them all, but the white pine I consider best.

LAKES.

I make little lakes on my farm by building dams across

the sloughs or ravines. These lakes cover from half an acre to two acres, and some of the deepest soon become stocked with native fish. Such lakes are a great source of comfort to the stock in hot weather, and furnish them with good water for drink. As a water supply for stock, however, I depend mostly on a deep well and windmill for Winter, with a good tank and return pipe, and allow the mill to run most of the time. The stock are thus supplied with water as warm as Spring water.

BLOODED STOCK.

I have a passion for blooded stock of all kinds, and usually raise enough to eat all the hay, grass and grain that I can raise on the farm. At the present time I have sixty-four head of Short-Horn and high grade cattle. Among them is the noted old bull Consul, 13,711, bred by J. O. Sheldon, Geneva, New York (former owner of the famous N. Y. Mills herd). This bull stood for several years at the head of the herd of Short-Horns owned by the Java Agricultural College. My principal object is to raise cattle for beef, and not to sell fine stock, though I sell a few calves each year. My intention now is to increase my herd to about eighty. I can then turn off a car load each year of first class cattle for beef. To me this would be more satisfaction than to buy my fattening stock, though perhaps such a plan requires more skill and care.

HORSES.

So far I have found less profit in horses, though I have given them much attention, and have some very good ones on the farm. Of the draught stock I have colts from such sires as the imported Percheron, "Diligence," and the noted prize winner Norman, "Dieppie," both imported from France by Dillon, of Illinois. I also have colts from that most noted of Scotch Clydes, "Donald Dinnie," now owned by Robert Holloway, of Monmouth, Ill. The original stock of these colts on the dam's side was a pair of English draught mares weighing eighteen hundred pounds each, and having good style and

action. I have always bred with special reference to action and style, as well as size. My colts are most of them too young to estimate their real value. We shall see what we shall see. I also have a few colts designed for the carriage and the saddle, which are of the Bashaw Hazard and Stonewall Jackson strains.

HOGS.

The breeding of swine has been with me for some years a specialty. My stock in this line is pure-bred Magies or Poland Chinas. For several years I have purchased sows and boars in Butler county, Ohio, and I have studied closely the nature and habits of hogs. If I have any hobby now, it is swine breeding, and like most hobbies, it don't pay any too well. But I believe it will pay some time and shall continue to breed carefully, and also shall hold on and wait for something to turn up. Have not made much money. I have always kept my hogs healthy, and though many of my neighbors have lost their entire herds, mine answer to roll call with great regularity and show no signs of feverish pulse or wasting cough.

I first tried Chester Whites. Some years ago the cholera held off until I had something over a hundred head of this breed; then it just made one job of it. I next tried the Berkshires. They were pretty, very active, and apparently ironclad, but I must have obtained the small kind, as mine would never grow big. A friend then induced me to try the Poland Chinas. I was so pleased with my success with them that I concluded to send to Ohio, to D. M. Magie for a pair. And each year I have sent to headquarters for fresh blood at fancy prices. Still the price of pork went down, even below the cost of production, and I began to look around for the means of making pork easier to raise. I housed, herded, slopped, ground feed, fed it cooked and raw, and still the price ran down. I still held on for "something to turn up." Nothing did, except the cholera among my neighbors' hogs. I became nervous over it. Every time a pig would cough I feared cholera. The next affliction was the hog doctor. He and his remedies proved almost as

disastrous as the cholera, and both had to be charged to the cost of production.

ARTICHOKES.

One of my neighbors had raised Red Brazilian artichokes for several years. I had watched him closely, and agreed with him that they were a success, and that I had lost time by not raising them sooner for feed instead of feeding so much corn. So I planted seven acres to begin with. I liked them because my hogs did, and next year I increased my fields to twenty acres, which gives me all I can use. Last year I planted a kind that is new here, called the White French artichoke. I think them an improvement over the Red Brazilian, as they grow deepest and are sweeter. So far from the artichoke being a nuisance, as some declare it is, I find them easy to eradicate by plowing under about July first. At that time there are no tubers in the ground to start from. This plowing effectually kills them. The heaviest corn I have seen this year grew where a crop of artichokes grew last year. I do not ring or cut my hogs' noses, but turn them on the artichokes about the middle of September or first of October. I give the fattening hogs about half the corn they will eat while on them. The stock hogs I feed corn in the evening. They will dig the artichokes eagerly, even when the ground is frozen an inch or two on top. As soon as it thaws again in the Spring, they will begin on the same spot again. I let them have the run of the fields until June first. During the month of May the ground becomes filled with long white sprouts, about the size of pipe stems. They are crisp and brittle like celery, of which the hogs are also very fond. June first I turn them on clover. By that time they have had rooting enough, and will not trouble the clover fields.

HOW TO KEEP HOGS HEALTHY.

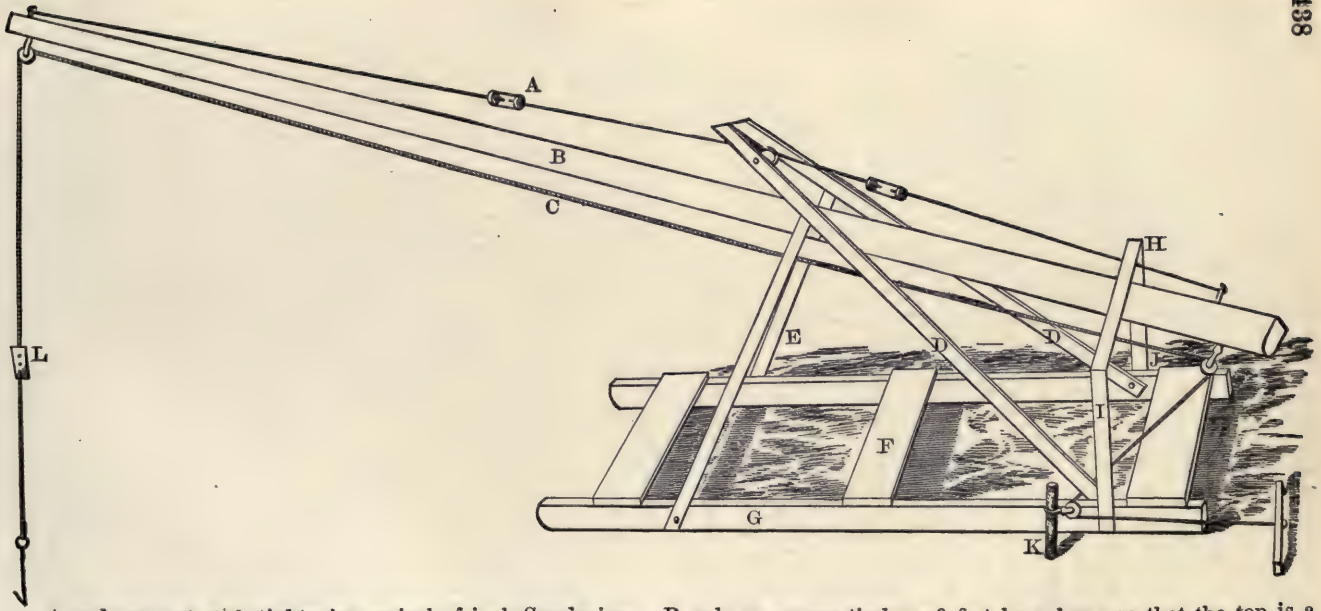
Next year I shall plant part of a field to mammoth sweet corn, the remainder in Yankee corn, called by some King Phillip. I shall turn the hogs on that field about the middle of August.

You now have my plan of making cheap pork. I believe that with the use of artichokes in Fall and Spring and feeding liberally with mangel wurtzel beets in Winter, when it is warm enough to get them out of the pits, a little flax seed or oil meal in the slops, a free use of bran and shorts in Winter, a free use of soot and ashes, cleanliness in breeding and feeding quarters, hogs can be raised cheap enough to pay, even at very low prices, and with this care you can almost defy the cholera. The hog doctor rolls up his eye that is not blind and says in a confidential and wise tone, "My dear sir, just so long as you follow your present course you will have very little need of my services." I have found it paid me to put up a few loads of after-growth clover, cured carefully, to feed to them occasionally in Winter. In my estimation diseased conditions in the hog are of slow growth, and are caused many times by want of change in their diet; generally by long continued feeding of corn; much in the same way that scurvy attacks the Northern voyagers.

I have not the least doubt that herds are often diseased by the practice adopted by dealers of hauling hogs that have died, along our highways, and from farm to farm. This practice should be stopped by law. I should certainly prosecute a man that would do this for trespassing on my premises, if there was any law to reach him. I allow no other hogs on my premises, and buy none, except a few for breeding purposes. Those I keep in quarantine until I know they are all right. A respectable breed of hogs, raised in the manner indicated above will not eat their pigs or act as though possessed of an evil spirit.

A healthy herd, and one that is profitable to the owner, can only be secured and kept in paying condition by his constant care. I say owner because I have never known many men to become rich except by minding their own business.

Cheap arrangement for stacking hay in the field. Any farmer can make it in a day. It is in general use here by our best farmers:



A, rod support with tightening swivels, $\frac{7}{8}$ inch Swede iron. B, pole or square timber, 40 feet long, hung so that the top is a little the heaviest. C, $\frac{3}{4}$ inch rope, passing over three pulleys. D, 3x6, 18 feet long. E, 3x6, 16 feet long. F, 2x12, 10 feet long. G, 3x12, 18 feet long. H, 4x4, 8 feet long. I, 4x4, 3 feet long, oak. J, 2x6, 12 feet long. K, stake. L, a block of oak wood, with three holes through which the rope passes; this block is raised or lowered according to height of stack. The load rises perpendicularly until the block strikes the upper pulley, then the lower end of the pole comes down on the dotted line, the top continues to rise with a side motion of fifteen feet, dropping the load in the center of stack. This works like a thing of life, and is as perfect a machine as the corn-planter.

BENJAMIN LEVAN,

GUTHRIE CENTER, GUTHRIE COUNTY.

Orchards — Manures — Black Walnut and Cottonwood Fence — Small Grain — Corn — Herefords — Raising Calves — Hogs.

The first sod on my farm was turned in the Summer of 1859, twenty years ago. The same season I put up a substantial brick building. In the Summer following I broke the remainder of the farm, making in all about seventy-five acres of tillable farming land. I also, among other improvements, set out about two hundred apple trees, and a wind-break on the west and north of the house and orchard, consisting of cottonwoods, soft maple, black walnut and locust.

ORCHARDS.

My apple trees did not do as well as they should or would have done, had I not planted them so close. Trees of that kind want plenty of room and should be at least two rods apart. The greatest enemies to fruit raising I find are the borer and blight, or mildew. For the former I have found a successful remedy in whitewashing the bodies of the trees early in the Spring, first adding half a pound of copperas to a patent pailful of the wash, just before using it. Also put around the foot of the trees leached ashes. For the mildew, I know no better preventive than the selection of such varieties of fruit as are not subject to its ravages.

MANURES.

I keep up my farm by continually adding to its fertility by home made manures. I always haul out all the manure right after harvest. I scatter it from the wagon and plow it under as soon as possible, with the very best of results. It makes big corn next year.

BLACK WALNUTS.

I also planted some black walnuts along the fence, planting the walnuts instead of the trees, which were very hard to get and still harder to persuade to grow. I planted about four feet apart, for protection and ornament. I planted about one hundred rods of these trees in the Spring of 1860. I cultivated them as I would corn for two years, since which they have taken care of themselves, answering not only the purpose for which they were intended, but the treble purpose of living fence posts, which they made long before the first posts were rotten. In the Fall of 1868 I tacked five common fence wires on the trees with staples, fastening them on tight. In a few years the wire where tacked on, became imbedded in the trees and is so imbedded yet, making a perfect live post wire fence. It is the best fence I have on the farm to-day, costing nominally nothing for repairs, while the trees have been bearing nuts annually, with a few exceptions, since they were six years old. The season just past they bore about two hundred and fifty bushels of walnuts, which at a low estimate would be worth fifty dollars. They are worth more than so much corn for feeding to hogs, who delight to eat them.

COTTONWOODS.

I set out at the same time one hundred and sixty rods of cottonwood slips, which soon made a wonderful growth, and in due season tacked on five smooth wires which is a good fence now. Some trees that have come up on the farm since will make fifty rails and one cord of wood.

SMALL GRAIN.

I find that it is unprofitable to raise small grain on account of its uncertain market. It has not paid well with me. I sow wheat and oats more for the purpose of feeding the straw to stock, and thereby converting it into manure, than from the prospect of an immediate return in the sale of the grain. I raised a good quality of wheat on land that has been under constant cultivation for twenty years, without any fertilizers,

but in quantity it failed me. I generally sow wheat and oats on corn stalk land.

CORN.

I have found that corn is the only grain that pays me for raising it. One feature about corn is that its cultivation does not impoverish the soil, as small grain does. I have raised corn for three or four consecutive years on the same ground, and the last crop has been better than the first, both in quality and quantity. It pays best to feed corn to hogs and cattle. Corn has never failed me as a feed for stock of all kinds and under all circumstances.

I generally plow all stubble land as soon after harvest as I can, which generally kills all weeds and makes the very best corn land. I always harrow my corn ground well before laying it off. After planting I harrow again, and when the corn commences to come up I give it another and last harrowing, which kills about all the weeds that are then up. After the corn gets up so that I can see the rows, I hitch to my double-shovel plow, and keep myself busy, say on fifty acres of corn, until too high for plowing. If the season is good the result will be a good crop of corn.

HEREFORDS.

I raise Hereford cattle, and have had them for years. I like them well. They are gentle, mature early, and are fair milkers and good butter makers, and easily kept on little feed.

CALVES.

I raise the calves by hand, allowing the calf to stay with the cow only till the ninth milking, when I take it to some secluded place, where the mother does not see it. I then milk the cow, and give the calf one gallon of the fresh milk twice a day till the fourteenth day. I then commence giving skimmed milk, taken from the previous milking, (say if in the evening, the morning milk,) first having made it tepid warm, and give the calf about five quarts of this milk to a meal, twice per day, giving older and a larger quantity of milk for twelve weeks

after. I give calves after that all the sour milk they will drink, once a day, and once a day all the water they want. If in the Fall or Winter, I give them all the oat hay they will eat. If in the Summer, I fence off a pasture for them, either of timothy or oats sown in the Spring. Under this system I raise calves that are the admiration of all who see them.

The advantages in favor of raising thus, are numerous, but I shall mention only a few. In the first place you have the full benefit of the cow for butter making purposes; secondly, the calf becomes fully domesticated and of a gentle nature, generally making a gentle cow; last, but not least, a calf weaned at the ninth milking will not experience the hindrances to its growth that all calves get that are weaned at a later day.

HOGS.

I prefer the Berkshire hogs. They give the best satisfaction since I have introduced them on my farm. They are sure breeders and the sows are good sucklers. The pigs make quick returns by maturing early. In fact, with fair treatment they are ready for the market at almost any time. Hogs, as a general thing, do well with me. Hog cholera sometimes shows itself, but I dread it little. I never had it but once among my hogs. In my case and many others, I think it was brought on by over-feeding new corn, the hogs actually gorging themselves therewith. Since then, if I feed green corn at all, I feed it cautiously. I prefer feeding good, bright old corn until the new becomes old enough to husk. My theory is, that any grain fed before its maturity is more or less injurious, and if indulged in too freely will result disastrously.

A. FAILER,

KELLOGG, JASPER COUNTY.

Short-Horns — Breed Nothing but the Best Stock — The Management of Hogs — Breeding — Weaning — Pens and Feeding Cribs — Artichokes.

ELMWOOD FARM.

My farm is situated in the southeast portion of Kellogg Township, and consists of one hundred acres of land. In its primitive state, a considerable portion of the farm was covered with hazel, young timber, and a grove called Wolf Grove. The remainder was prairie. My farmhouse stands on beautiful rising ground, in the south edge of this natural grove of elms, linns, oaks, box elders, wild plums, crab and thorn-apples, the whole covered with a heavy sward of blue grass.

THE CREEK.

At the foot of the hill runs the clear and sparkling little Elk creek, which is fed by living springs, furnishing water the entire year for all stock on the farm. Here are the famous Elk creek camping grounds, known by the early gold seekers en route to California, which tradition says was once the corn field of the Musquaka Indians.

THE SOIL.

As to the fertility of the farm, it is not excelled by any, as much of it, in its native state, was what is called hazel-rough. My farm is all under cultivation, and is used as pasture, meadow, and farm lands.

BARBED WIRE FOR FENCES.

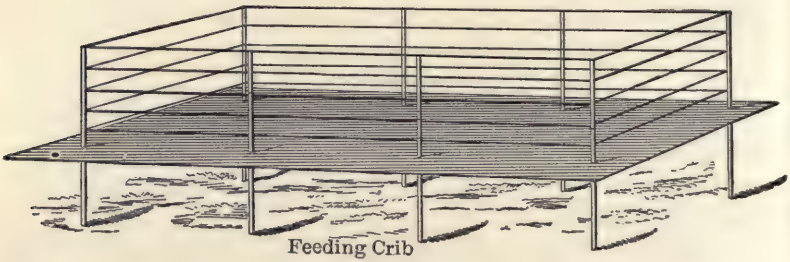
I have it fenced mainly by barbed wire, which I prefer for cattle and horses. All my fields, lots, or yards, in which hogs

are kept, are fenced with three boards below and two wires above.

SHORT-HORNS.

For the last five years I have conducted my farm mainly in the interest of stock raising. On it now may be seen a small but choice herd of Short-Horn cattle, bred entirely for stock purposes. The bulls I sell at about one year old, and they average one hundred dollars each. My choicest heifers I retain for breeders, which bring as good prices in proportion as do the bulls. When will the farmer learn that it will not pay to raise common cattle? It costs very little more to raise good blooded stock that readily sell for prices named.

FEEDING CRIB.



Feeding Crib

The above cut represents my plan for an outdoor feeding crib, or rack, for feeding hay, straw, or corn to cattle. I take eight posts eight feet and a half long and put them in the ground two feet, in two rows fourteen feet long and four feet apart. Two and a half feet above the surface of the ground, I spike to the end posts studding two by four, six feet long, so that they project one foot outside the posts. Then I spike the others in a line. Now lay a tight floor on this, using lumber sixteen feet long (two inch plank is best). This floor projects one foot outside of the posts all around. On the outside edge, on top of the floor, fasten a studding two by four, lying on edge. This is for hay or straw. But, if the crib is designed for feeding corn, the floor should extend twenty to twenty-four inches outside of posts, and should have two by six inch joists

around the outside edge. Now finish up by nailing on the posts corn crib boards, or common fencing. If intended for hay or straw, nail the lower board eight inches from the floor; if for corn, six inches above. The crib can be made any desired length for the accommodation of the stock to be cared for.

IMPROVING STOCK.

If farmers can not at once change their stock by selling the common and buying thorough-breds, they should at least breed from none but the pure blood males. The day is gone by for making money from common cattle, in Iowa. The markets of the world demand better beef than they produce; the best selling fat steer, and the one that pays the best to the breeder, is the two-year old grade or full-blood, that weighs fourteen hundred to sixteen hundred pounds. These always fetch the top of the market.

HOGS.

In connection with the herd of thorough-bred cattle, I breed fine swine, such as Poland Chinas, Berkshires, and at this time a few Durocks, or Jersey. These I sell mainly for breeding purposes. All animals not sold as such are fed for fat market. I sell usually from forty to sixty annually, that are bred expressly for the market, and find from an experience of over ten years that the most profitable is a cross of a Berkshire on the Poland China sow.

I have been in the business of hog raising for twenty-five years in Iowa. I have never lost a hog by what is called "hog cholera." I am of the opinion that hogs that are properly or sensibly bred and kept, are rarely attacked with disease. It can not be expected, according to common sense, or in the nature of things, that a sow at or about one year old, undeveloped as she is at that age, could possibly have as strong and healthy pigs, or be as profitable a breeder as one which has had one litter.

YOUNG SOWS

should be first bred mainly to test them as breeders. When

proven to be good, they should then be placed in the breeding class. I believe in breeding at two years old, or older, and keeping them as long as they breed and do well. The sows will thus average at least two more pigs to the litter, and the pigs weigh, when ready for market, from sixty to eighty pounds more. I sell them when they are from twelve to fourteen months old. They weigh then from three hundred and fifty to four hundred pounds each. It may be interesting and profitable to give my manner of treatment, and my general management.

THE MANAGEMENT OF BREEDING STOCK.

Breeding stock should never be allowed to become fat, and it is important that this has been the condition of their ancestry for generations back. When such is the case, it is a guarantee of soundness and good health, freedom from scrofulous taints, or weakness in any part. I also keep breeding stock as long as possible on pasture, where they can have access daily to running water, so that in warm weather they are able to take their cooling bath.

Corn should be fed only sufficient to keep them in a good, healthy, strong, active condition. They should also have freedom to use their noses. They were made with a deep-seated inclination to use them. Breeding stock must not be tortured with rings in their noses, but should have, during the Fall and Spring, free access to artichokes. These expand the stomach and give feeding capacity. They also cool and purify the blood. Indulge them in the desire to root. They would not thank a man to do their rooting for them, but prefer to do it themselves. It is indeed, "Root, hog, or die!"

If breeding stock have been for generations treated in this way, with proper sleeping arrangements during Winter, so that they have not taken cold and become consumptive, they have the best possible conditions for the raising of healthly and profitable pigs. So much for the breeders.

EARLY PIGS.

I never want my pigs to come, here in central Iowa, earlier

than the 1st to the 10th of May. I keep a record of the time I expect each sow to come in, and ten days prior to that time separate her from all others, putting her in a dry, warm place, so constructed as to protect her from rains and storms, yet with plenty of light and air. I study the nature of the animal, and take advantage of her peculiarities, as the bee-keeper does his bees. I find no trouble in getting a sow into her pen, or place prepared for her delivery. She is more like ourselves than we are willing to acknowledge, and is far easier led than driven. Educate your sows so that you can take them wherever you wish by simply taking a pail of swill to coax them along. By this means there is no danger of injury to the sow, and this treatment saves many hard words and blows.

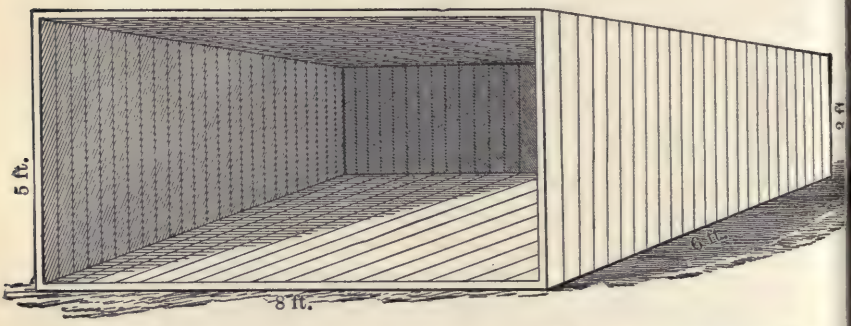
FEEDING YOUNG PIGS.

The time has now come when the sows have all been taken care of, properly treated and fed, and have had the range of a good pasture after the pigs were strong enough to follow them. The pigs are therefore ready to be weaned, which should be done, if you desire to breed the mother a second time, when they are about six weeks old. Before this I teach the little fellows to eat corn and swill. The corn I always soak in a barrel of water, which must be kept sweet by putting in fresh water. I put in a handful of salt to each barrel. In the absence of milk and house swill, I use mill feed. I make a barrel of swill, and in it put a handful of salt. After standing from twelve to twenty-four hours, the weather making it slightly acid, it is ready to feed. I never allow it to get sour. I feed twice daily of this corn and swill, for a month prior to weaning. I feed the sows and pigs together, giving them all they will eat. I now take away the sows for twelve hours and keep them on dry feed and water, then let them go back to the pigs. I separate them again for twenty-four hours, and then let them out to their pigs. I continue to lengthen the hours that the sows are kept away, until they are dried off without damage to them as sucklers. The pigs which I design for the market I push as fast as possible, feeding as I have

stated. In the Fall I give them the run of the artichoke patch. Quick returns are what all breeders should aim to make. I never keep a pig but one Summer. If I can not make her then weigh at twelve or fourteen months old from three hundred to three hundred and fifty pounds, I consider no one to blame but myself.

SLEEPING AND BREEDING PENS.

I herewith submit the best sleeping arrangement for hogs that I know of. I have seen many, but prefer this as the result of my experience. I make the pen face to the south, and have the entire front open, as shown in the plan:



Set four posts in the ground. The front posts should be five feet above the surface, and eight feet apart; the rear posts three feet above the level, and six feet to the rear. This makes a floor six by eight feet. The roof will have a slope of two feet. Cover as means will permit. Tin or iron makes the best roof, shingles the next. Boards will, however, do. Board up the ends and north side. Spike on in front a six-inch, and at rear an eight-inch joist for floor. This will give a slope of two inches to the front, so that the rains, if blown in, will run out. I then fill with any earth convenient, pounding it in solid, to top of front and rear joists, then cover with plank or inch boards. There must not be any space or air chamber beneath the floor, or it will be too cold in Winter. A better floor can be made by using stone chips, filling up with them as described, and cementing them together with a cement mortar.

A good clay, moistened, and well pounded in when dry, makes a good floor, also. The pen may be made warmer by lining the inside twelve to eighteen inches high, and filling in between the lining and outside with any suitable substance. If more pen room is needed, any length required can be built together, but I always cut it up in sections of not over eight feet long. In cold weather hogs will pile up if they can, and become heated. This should always be prevented. This pen is proof against it, and will save its cost in this way alone. Hogs are frequently very much damaged (often resulting in the death of half the herd, by sweating and heating nearly to suffocation in the center of the pile, and forcing themselves out when it is not possible to stand it longer. Then comes the sudden chill, causing colds, coughs, consumption and death. I give but little bedding, if any. I also use these pens for my sows to have their pigs in, by closing up the front the proper hight, and putting in a door. The sows, being accustomed to the place, are easily coaxed in. This I do ten days prior to the time to come. As before said, I give but little bedding; only enough to pacify them.

W. H. PALMER,

WATERLOO, BLACKHAWK COUNTY.

Wheat — Oats — Clover — Corn — Cattle — Hogs — Sheep — Pasture and Meadows — Manures — Fences — Hedges — Groves — Orchard — Farm Buildings — Hay Stacker — Drainage.

CEDAR VALLEY FARM

received its name from its owner, and from its being situated on the slope of the Valley of the Red Cedar river, in Mount Vernon and Bennington townships, Blackhawk Co., Iowa. I own four adjoining eighties, together with the home residence on the corner of Section twenty-four, six miles north, and one east of the thriving city of Waterloo, which is the

head of navigation on the Cedar river, and reached by the Iowa Division of the Illinois Central and the Burlington, Cedar Rapids & Northern railways. I entered my first eighty acres in the year 1856, and broke my first land in 1860. In 1861 I made several additions to my farm of land varying in price from $5 to $20 per acre. This gave me in all 345 acres of rolling prairie land, of a black loam with a clay sub-soil.

When my land was new, wheat was our best paying crop. For the first fourteen years I raised it with good success. I raised an annual average crop on my farm of sixty-three and one-eighth acres, averaging twenty-two and one-half bushels per acre. The average price per bushel during the time was $1.12½. The lowest price that I received per bushel was fifty cents for wheat that got wet in threshing. The highest price per bushel I received was $2.25. This was the war price. I raise principally Scotch Fyfe, also some Tea and Michigan White varieties. I commence to drill as soon as I can after the 20th of March. The following are the figures arrived at, per acre:

COST OF RAISING WHEAT.

Interest on investments,	$3.00
Plowing one acre,	1.00
Seed and extra cleaning,	2.00
Drilling,	.20
Dragging and rolling,	.35
Cutting,	.50
Binding and shocking,	.75
Stacking,	.75
Threshing, 10 cents per bushel,	2.25
Hauling six miles to market,	.67
Total,	$11.47
Proceeds, 22½ bushel, at $1.12½ per bushel,	$25.31
Straw,	1.00
Total,	$26.31

Net proceeds=$14.84.

For the last seven years, however, the crop has fallen off on average amount raised, and also in quality, except for the

year 1877. I grow about the same amount of straw, but my land has lost the elements needed to form the berry. Therefore I find the average of the last seven years only twelve and one-half bushels to the acre, and the price but eighty cents per bushel, leaving a profit of forty-seven cents. I have been troubled twice in the last twenty-one years a little by chinch bugs.

OATS.

I usually raise a fair crop of oats, but sometimes they lodge, and cost all they are worth to harvest them. The following is their showing:

Interest on investments,	$3.00
Plowing one acre,	1.00
Seed,	.55
Drilling,	.20
Dragging and rolling,	.35
Cutting,	.40
Binding and shocking,	.70
Threshing, 4 cents per bushel,	1.60
Hauling six miles to market,	.50
Total,	$8.30
Proceeds, 40 bushels, at 22 cents per bushel,	$8.80
Straw,	2.00
Total,	$10.80

Net proceeds=$2.55.

Oats exhaust the land, therefore I do not raise more than I can consume on my farm. I do not like to work barley in the land, either, and do not raise it. I sow rye occasionally, when I need it for pasture the following Spring. Then I seed it in the Fall. I never raised timothy or sowed any but once, and then I did it for the sake of the Alsike seed in it, and it paid me well.

CLOVER.

I have raised considerable red clover in the last twelve

years, with very good results. At different times my crop has averaged four to five bushels of No. 1 seed to the acre. One year I realized eight dollars per bushel, and another year ten dollars per bushel. The crop averaged sixty bushels. I usually sow clover on the wheat land after the wheat is sown in the Spring, and drag it with a chain drag. I have had a volunteer crop by plowing the clover stubble down after taking off the seed, and sowing the land to wheat. The following Spring it has re-seeded itself and produced a good stand. I have also put the land into corn, then wheat, and it has re-seeded itself. I have threshed the first, second and third crops from the same land, for three consecutive years. Twice I have threshed two crops off the same land. I cut my first crop for hay usually about June twenty-fifth, and it averages one and a half tons to the acre. In September following I cut the seed when it is a handsome brown, and when the dew is on, or on cloudy days, with a self-rake reaper, and let it lie. If it rains, a shower makes it thresh all the better. If I have occasion to move it I do it with a barley fork, and do not turn it.

Stack when well dry, and cover with wild hay. If it is cold in December, I thresh. I never break my sloughs in the pastures, but cover them with clover, by the application of clover straw and manure from the barnyard, where the stock had been fed clover hay. Clover does not exhaust the land, and its roots keep up the fertility of the soil. The following are the figures per acre, of an average of three bushels, at six dollars:

Use of land one year	$3 00
Ten pounds of seed to one acre	1 00
Dragging and rolling	30
Cutting	40
Stacking and topping	1 00
Threshing per acre	4 17
Cleaning	21
Hauling six miles to market	18
Total	$10 26

Proceeds of three bushels per acre at $6.00 per bushel	$18 00	
First crop of grass	1 50	
Straw after threshing	1 00	
Net profit		10 24
Total	$20 50	$20 50

I owned the first huller in the county. It was a John C. Birdsell, and I used it eight years. I have raised a few crops of Alsike clover seed, and my land is well seeded. My cattle, sheep and horses are fond of it, and of all clover hay. I never have seen any damage resulting to horses yet from eating it, when it is well cured by salt.

CORN.

Corn is now the staple crop, to which I have turned my attention since wheat has failed. I also raise hogs and fatten cattle. The following are the figures for raising corn per acre:

Interest on investment		$3 00
Plowing one acre		1 00
Seed, marking and planting		37
Dragging, before and after		50
Cultivating four times		1 37
Picking and cribbing		1 50
Total		$7 74
Proceeds of forty bushels at twenty-five cents per bushel	$10 00	
Stalks	50	
Net		2 76
	$10 50	$10 50

CATTLE.

When I commenced cattle raising on the farm, I had forty head of common cattle. I have greatly improved them, using high grade or Durham bulls. I breed my heifers at three years old. At first my stock roamed at large. I cut hay from the same land, and gave little attention to tame grass. Since the pas-

sage of the law restraining stock from running at large, I have seeded down more than half of my farm, and pasture my own stock, as it pays better than to cultivate the land, or send the cattle to the herd, a distance of fifty miles.

What it costs to raise a steer three and a half years - - - - - -		$31 00
And to feed it thereafter five months, fifty-five bushels of corn at twenty-five cents per bushel - - - - - -		13 75
Hay - - - - - - - - -		2 00
Total - - - - - -		$46 75
Proceeds on sixteen hundred pounds at four dollars and a half per hundred are - - - - - -	$72 00	
Net profit - - - - - -		25 25
	$72 00	$72 00

I let five pigs run after two steers, thus paying for all labor. I pasture my steers until November fifteenth, feeding them shocked corn from October fifteenth. Then I feed in my yard for a month; next I tie them up in stalls and feed husked and shelled and then ground corn, with sheaf oats occasionally. I water them twice a day. I feed them three times, and give them salt twice a week, with earth occasionally to lick, which creates an appetite. I furnish them all the corn and hay they will eat, in order to make the most pounds in the shortest time. My cattle are usually very healthy. I had five sick once with dry murrain, caused by feeding them mostly corn and stalks in February that were shocked the Fall before. Those cattle died, as do hundreds of cattle annually from running in corn stalk fields. The trouble is that they eat a large amount of corn, dry husks and stalks, and do not have salt enough to make them drink sufficient water. The feed becomes impact in the stomach, and after a time will not digest. It soon irritates the stomach, produces inflammation of the receptacle, and causes them great agony until they die. Give cattle plenty

of salt and access to good water, and there is no danger of corn, husk or smut, as neither will hurt them.

HOGS.

I generally breed the Poland China hogs, as they are hardy, good feeders, and are susceptible of making large returns. I generally breed from old sows, as the pigs are stronger and have better constitutions. I have had pigs sick from quinsy, but never lost any from cholera, while my neighbors have lost hundreds. I pasture them through the Summer, and feed them soft coal occasionally.

SHEEP.

I have been always used to sheep, and had sole charge of over three hundred, in England, for years. I considered them the best paying stock on the farm, although we were always troubled there with scab when large flocks ran together in Summer. Foot-rot and other diseases were very rare. Two years ago I wanted something more to consume the grass, and add to the fertility of the soil. I bought one hundred common sheep and a Cotswold buck. At the expiration of twelve months the wool sold at twenty cents a pound, unwashed, and the increase was worth more than the cost of the original sheep. This year (1879) my sheep averaged in wool, $2.05 each. It brought twenty-five cents a pound, unwashed.

I never thought it necessary to wash sheep, except with tobacco juice for scab or ticks, after shearing. The buck I purchased and twenty of his progeny died from some unknown cause. They commenced to die in August. September 1st I weaned all the lambs, when they died faster. I think when they had to trust to their teeth, the green grass was too strong and caused them to have scours, as they died in a short time.

After all, I do not consider that I lost any money by my flock this year. Nor am I discouraged, as I have now about two hundred. I use a buck over one year old, as the lambs are stronger. I use this buck two years, if he proves serviceable, and put him with the ewes about October 15th or 20th. I sell an occasional buck lamb to the butcher at from $2.75 to

$3 each. To get rid of old ewes I wean the lambs early, so as to refresh the ewes on grass. I fatten them on ground feed. I do not yard them in Summer, but I Winter them in good, comfortable sheds, protected on the north and west by a belt of evergreens. I Winter the lambs by themselves, and the bucks by themselves, except two months when they run with the ewes. I feed oats in the bundle, in a double rack, with mangers, so as to receive what falls through. They have hay and all the straw they can eat, and I keep the yards well littered. I salt them once a week, and they have access to well-water in Winter and running water in Summer.

My object in keeping Cotswolds is to have longer and better wool, and heavier mutton of a better quality in a shorter time. These benefit the pocket and improve the farm. It is emphatically true in all business, that nothing pleases without profit as well as pleasure.

PASTURE AND MEADOWS.

I usually sow grass seed after wheat, in the Spring, for pasture and meadow, and sow five quarts of timothy, five quarts of clover and five quarts of red top, and drag with chain drag. I generally take the first crop of clover after the first haying, for seed. I never sow blue grass seed nor white clover, as I consider them a nuisance on all cultivated lands. The blue grass has to be subdued again, and they both drive out every thing else. I never pasture very close, only so as to have red clover re-seed itself, and continue for years. I treat my meadow land the same. The old grass protects and keeps the land damp in early Spring, before it can shade and protect itself. I keep all stock off the meadows when they are soft in Winter and Spring, and do not let stock pasture in it after the grass starts. I consider it malpractice to break up meadows, as the older a meadow the better it is, if well seeded down and taken care of.

MANURING.

With reference to applying manures, I am satisfied that more can be realized from manuring, as top dressing, on grass

lands, particularly on meadows where the crop is carried off. All manures saved on the farm should be devoted to this purpose. Where convenient it should be applied directly after the hay comes off, or in the Fall, and brushed in with chain drag. Cultivated lands can be kept up at less expense with clover than with manure.

FENCES.

I formerly used for fences four plain wires to keep out cattle and protect crops. For hogs, calves, and sheep, two or three boards and two or three wires are sufficient. Since barbed wire has been introduced, which is a great saving over posts, I use that. The first principle of a good wire fence is that the end or corner post shall have a boulder as large as a good team can haul. I drill a hole two inches and put in a peg to fasten the first post to. There will be no trouble in coming up with wire or frost. I use two barbed wires, and one plain wire in the middle. My posts are two rods apart, with a slat between. This makes a good fence against cattle and horses. I prefer burr or white oak posts, as they hold nails and staples, and will last from eighteen to twenty years. Several parties have tried to introduce the iron post. They are a good fancy post, or a movable one, but the interest on an iron post would keep me in wood posts and permit a renewal every six years.

I have had some experience in fencing, as my farm is divided into sixteen fields, surrounded by seven miles of wire and board fence. I never find any trouble from the stock being cut with wire fence, as they are well educated in its uses.

HEDGES.

I have planted several miles of Osage orange fence. I took immense pains and had very poor success, as climate is too severe and kills it out. I have about a mile left where it was protected by a grove, but it is rather unsightly. I have tried hawthorn, which mildews badly and dies out. I have also tried several miles of white or gray willow, and have succeeded in making a fence, but it grows too rapidly and costs more to keep it trimmed than to keep a barbed wire fence in repair. And if

this fence is not trimmed, it is useless as a fence, and shades and takes two rods of land on each side of the trees. Therefore I consider it a nuisance, except on the north side of a pasture, for shelter for stock in the Fall, or for shade in the Summer. Arbor Vitæ makes a nice ornamental hedge for door-yard or for screens.

GROVES.

Sixteen years ago, after raising one crop of wheat to pay for the land, I planted a grove of five acres around my orchard and yards, for two purposes ; one was for protection, the other was fuel. I succeeded in both. I planted the grove with soft maple, mixed with white ash, oak, chestnut, timber locust, black and white walnut, sixteen feet each way. After five years the soft maple died out, from being poisoned by the white walnut. They will not grow together. They did not die in debt, however, as they furnished me with firewood three years. Now I have a beautiful grove of white walnuts and the other varieties. Inside of this grove my orchard and yards are protected by six to twelve rows of arbor vitæ and red cedar, eight feet apart, alternately, which are twenty to twenty-five feet high, and large enough for posts, affording a wind-break, we can not look or even go through it.

TREE PROTECTION.

This is what I call protection to man and beast, as man is not troubled with snow, and sheep and cattle chew their cud and sun themselves at pleasure. Every farmer ought to have it, for the cost is nothing compared to its comfort, when we have the Manitoba wave booming down upon us at the rate of 2:40. I have other groves of soft maple and ash, from which I have had my firewood for the last ten years, with plenty to spare, while some of my neighbors are burning corn. I also have a grove of two acres of walnut, and two acres of white pine and larch, which is the best, and admired by all who see it. It is planted north and west of a little creek, to keep away the snows in Winter, so that cattle can drink at all times. My one, two and three year old plants were pulled up in the forest at

Sturgeon's Bay, Wis., and cost me, delivered at Waterloo by express, $2.00 per thousand. I planted in beds, and shaded one year, then planted in rows in the nursery, and cultivated another year. I then planted in the grove as early as the buds started, and not later than corn planting time, and in the same condition as for planting corn.

PLANTING TREES.

I have always had great success in planting trees, as I never expose the roots. I planted my pine and larch grove in rows four feet apart, and eight feet apart in the row, alternately, and cultivated two years in corn and potatoes.

I keep a nursery of all such material for sale, which has paid me well, and given me trees for little or nothing. This grove is seven years old, and the trees are ten to twelve feet high. Their average growth each year is now two feet, and though they stand too thick now, they are all the better for the growth. I chop them down or thin them out for Christmas trees, and also feed to the sheep for the pitch and tar that are in them. They will eat both bark and branch.

COTTONWOOD.

Eighteen years ago I planted two rows of cottonwoods, eight feet apart, one for posts and one for shade, sixteen feet apart in each row alternately. On the other side of the road I planted soft maples, forming a beautiful avenue, admired by all who saw them. The trees grew well to the hight of fifty feet. Their shade and roots claimed three rods of land from them. In 1877 I chopped down one hundred and thirty-five trees in one row, and cut off the other row ten feet high, making sixty cords of five foot wood, which I hauled six miles and sold for $5,00 per cord. The stumps grew one year, and died. I am not sorry, as cottonwood trees are a nuisance on a line for posts, or for any other use.

ARTIFICIAL GROVES.

I have twenty acres in six groves, and have tried trees of almost every variety known from New York City to the Rocky Mountains. For general cultivation I should plant European

larch, white ash, and nut-bearing trees, with the exception of chestnut, which is too tender for this climate. Every nook and corner and some very poor land in England is planted to larch, for gates, posts and common building lumber. The white ash is good for mechanical purposes. For protection I prefer white pine, Norway spruce and arbor vitæ. This latter is also good for screens or ornamental hedges. No man in Iowa should be buried in a coffin if he has not planted a tree to make one. W. C. Bryant, in his "Forest Hymn," writes: "The groves were God's first temples." But I say artificial groves are the planter's living monuments, showing the work of our hands until our name and even our generation pass away and be forgotten. They are also things of beauty, which are joys forever.

ORCHARD.

Having had eighteen years' experience with my orchard since I planted it, my dead trees have taught me a lesson as to what and how to plant. I planted trees recommended by the Northern Illinois Horticultural Society, such as Early Joe, Early Harvest, Gilliflower, Little Red Romanite, Domine, Yellow Bellflower, White Bellflower, White Winter Pearmain, English, American and other russets, Rambo, Milan, Northern Spy, and many others. More or less of all these are dead and dying. I would choose for planting, Jonathan, a beautiful apple, early, and a profitable bearer; Rawle's Jannet, a small apple, but a good keeper; Sops of Wine, Fall Wine, Yellow Jenneton, Fall Swaar, Seek-no-further. I would also recommend Ironclad; they have given solid satisfaction. For Summer, I choose Duchess of Oldenburg and Red Astrachan. For Fall, Fameuse or Snow and Wagner. For Winter, Tallman Sweet and Willow Twig.

I have three and one-half acres of orchard; one piece of two acres, has borne for ten years; the other piece has died, and I have replanted it. I planted the trees twenty feet apart, but would recommend twenty-five feet for hardy trees, three to four years old, and procured of some reliable nurseryman.

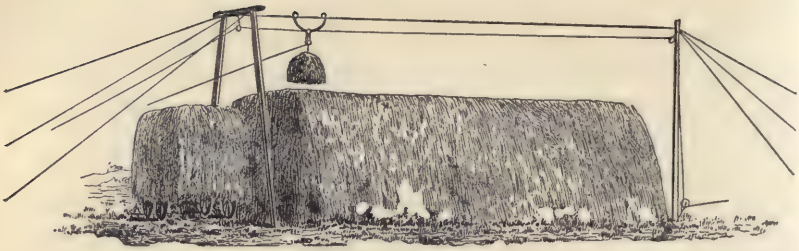
Never buy of tree peddlers, as they have only the cullings from some nursery, and name them to suit the purchaser. Such men always claim that they represent some good nursery. My apple trees have borne well for the last four years, particularly in the year 1878, when I gathered six hundred bushels from them. I prune a little in Summer, when the trees are young, but rarely afterward, unless they crowd each other. The enemies of the apple trees most prevalent are the rabbits, which I treat to cold lead. The caterpiller, also, annoys me. I destroy them. The grass mice come, but I drive them away by pasturing close in the Fall.

FARM BUILDINGS.

My farm buildings are ample and convenient, but I do not pretend that they are models. I built over two hundred feet by fourteen feet, eighteen years ago, of lumber, and they do good service yet. My sheds are partly open to the yards, where the stock cattle run. I have a convenient barn, horse stable, fat cattle stable, granary, wagon shed, hen house, piggery, etc., well built and protected with evergreens for comfort. I believe in good protection for myself and brutes. As I have not barn room enough for all my hay, I have used a contrivance of my own to stack hay with horse power, which I have greatly improved by the use of E. L. Church & Co.'s improved Hay Elevator and Carrier. I use the track carrier in the barn, and and the rod carrier for stacking.

My stacker is made of three red elm poles, two at the load end of the stack, and one at the other end, The hay passes up from the load thirty-five feet high to a cross bar, seven feet long, fastened to the two poles; then it passes, on a rod forty-five feet long, over the center of the stack, where it ought to be most solid. It is guyed well and solid with fence wire, and works to a charm, making a stack over thirty feet high, twenty by forty feet long. It puts a large bulk in a stack, and does not spoil one-third, as is usually done by the old way. The hay is also got to the stack with ease.

HAY STACKER.



The above cut is the plan of the stacker; been in use twelve years. The three red elm poles are thirty-five feet long by seven or eight inches in diameter at the large end (telegraph poles will do first rate), using a three-quarter inch iron rod forty-five feet long, from the cross-bar, seven feet long, to single pole, as a track, and a three-eighth guy wire at each end anchored to a boulder and tightened by a screw where stationary, to move use post. The weight runs up and down this guy to return the fork and carrier, and the two other guys, number 9 fence wire, at each end, act as braces.

The entire cost of the outfit, including rope, fork, poles, etc., need rarely reach thirty dollars.

The fork works directly between the load and the stack, carrying its burden the entire length of the latter, and dropping it anywhere through the center of the stack, so the builder can evenly distribute it; it follows that the stack, when finished, will be hardest packed in the center, and in settling the outsides fall much lower, forming a complete water shed.

In stacking in this manner, the stacker needs no help, and it is much easier than the old way, and four times faster.

The same remarks hold true when filling barns and sheds.

DRAINING.

I have had considerable observation and practical experi-

ence in England as a renter, with regard to draining, which induces me to adopt the same plan here in my adopted country, and on land of my own.

Good drainage removes from the surface stagnant water which sours all vegetation and rots sheep. It also utilizes the water, making a running stream for sheep or stock to drink from, and rendering the farm more pleasing to the eye.

I have known drainage to be done in various ways, with willow or brush, where stone or tile could not be had. Stones picked up in the fields and put in the drain, four inches in the bottom and sixteen inches high in a drain of three and a half feet deep, are considered better than tiles, where field stones are plenty, as in some kinds of soil the tile are liable to get full of sediment in a few years. I saw tile draining in England in 1854 and 1855. In 1864 I visited that country again, when some of the drains were choked with sediment. I returned to England again in 1875 and 1876, and those drains were still growing worse. This sediment is the accumulation in the tile from the yellowish water, and the tile becomes filled with roots.

I drained one hundred and five rods last Summer and adopted the following mode: I commenced at the lower end so that the water could run off. I dug about ten rods and put in three inch tile as evenly as possible, with grass or wild hay on top, around. Then I cut down the sides of the ditch, being soft and porous; then part of the surface soil, then clay, topping off with soil; and so on with fifteen rods more, to the end. Near the lower end I put in a large watering trough, and carried the water along through it, running over the lower end and dropping off into the drain again. I dug out a place for the stock to go down, and as the outlet drain is as low as the trough, it keeps dry if stoned up, and makes a splendid watering place, cool in Summer and warm in Winter. It has run all Summer.

It cost thirty cents a rod for digging three and a half feet deep The three inch tile cost fifty cents per rod. The hauling of the tile nine miles, laying and filling, twenty cents per rod. Total cost one dollar per rod. I should have drained before, but when I could buy eighty acres cheaper than I

could drain a piece of wet land, I did so. Drain tile are high here, as there are no facilities for making them, but I intend to drain two sloughs, one and a half mile long, next Summer, for the benefit of the land, and the use of the water in each pasture. The wet land is of little use without draining, and the water obtained is worth all the labor, as it is not like a windmill, which requires oil and repairs often.

My land is watered with a fine running stream, open Winter and Summer, protected from the snow by a white pine grove, making it pleasant for stock to stand around. I have also another first rate watering place, (in use ten years,) a large, stoned well, eleven feet across and six feet deep, with an approach planked for the stock to go down to drink.

GEORGE W. SHAW,

GARDEN GROVE, DECATUR COUNTY.

A Fruit Farm That has Paid Ten Per Cent. Interest on the Investment—Planting and Pruning Pear Orchard—Cherries — Currants — Grapes.

In treating a subject that volumes have been written about, I can only briefly touch on such varieties of fruit as have paid ten per cent. on time and money employed. The peach, gooseberry, strawberry, raspberry and blackberry, though profitable with others, have not been remunerative with me, probably for the want of proper care.

APPLES.

In planting our early apple orchards, up to the hard Winters of 1855, '56 and '57, the old style of growing trees had been adopted; planting far apart, and trimming the trees up, six or eight feet from the ground. Those terrible hard winds and destruction of trees, caused a change in growing fruits. The cry then was, low heads and no pruning. Conse-

quently in the West, we have tens of thousands of trees, planted from eight to twenty feet apart, whose limbs touch, and which are unpruned, and in an unhealthy condition.

PRUNING.

Some have commenced cutting out every other tree; others prune up six or eight feet high. I have pruned more than enough fuel for a year's consumption from my orchard, and yet it needs more.

In my late planting, I have aimed to plant two rods apart, good healthy two and three year old trees, with limbs coming out like the thumb from the hand, not having branches closer than from three to four feet from the ground. I try to grow them in a conical form, with the limbs twelve to eighteen inches apart, and equally distributed around the tree. I have no forks.

BEARING TREES

My first trees bore some fruit after being set out five years. I would prefer not to have them bear heavily until they had ten years' growth in orchard. The best bearers are those that are the most heavily manured. A wagon load scattered underneath the branches of a large tree, seems to make it bear well, and I think it a great help, causing the tree to endure the drouths of Summer, and the cold, dry freezes of Winter. My Northern Spy trees bear grandly, treated as above, every year. The weeds are mowed down in July or August, and are left on the ground for mulch.

LIST OF APPLES.

For Summer. Early Harvest, Red Astrachan, Duchess of Oldenburg, Benoni, Early Joe.

For Autumn. Lowell, Dyer, Maiden's Blush, early Pennock, Rambo, Fameuse.

For Winter. Ben Davis, Rawle's Jannet, Willow Twig, Jonathan, Northern Spy, Winesap, Small Romanite, Grimes' Golden.

PEAR ORCHARD.

It is with some diffidence that I write about the pear,

since such high authority as D. B. Wier claims that it costs five hundred dollars to raise a bushel of pears in Iowa or Illinois. I had thought that five dollars per bushel was pretty good pay for raising this fruit, say, fifty bushels of oats for one of pears. It did seem like a good price, not like a bank president's salary, or the warden's of a penitentiary, yet a fair way for a laboring man to earn a livelihood.

DEEP PLANTING.

I respect the plan of deep planting, plowing the dirt to the trees, but prune little, aiming to get an early growth of not more than ten or twelve inches annually, and giving no cultivation after coming into bearing, except to put a wheelbarrow load of manure around each tree in July, working it into the ground next Spring, if the tree has failed to make its twelve inches of growth during the previous year. Otherwise, I simply leave it to act as a mulch, thus keeping the ground cool and damp in Summer, and warm and moist in Winter.

PRUNING.

Let the limbs grow from the ground up; prune with the thumb nail; remove dead limbs with the saw; cover saw cuts with grafting wax.

RIPENING THE FRUIT.

Gather the fruit when hard, but while it will separate readily from the stem when lifted up. There are frequently several weeks' difference in the ripening of pears on the same tree. My plan of ripening is to place several bushels on an upper floor, with a blanket under and one over them. They color up better, and are much more delicious and melting than when left to ripen on the tree.

Beurré Giffard, which I gathered on the thirtieth of July, were thoroughly ripe by the ninth of August, after treated as above. Louise Bonne de Jersey and Sheldon, gathered September first, were delicious by the tenth. The Lawrence is my only Winter pear that yields much; but with the above treatment, it does not ripen as well as the others.

I have planted pears thirty-five years, probably not more

than fifteen in one hundred are living now; yet the investment has brought, I think, ten per cent. on my time and money employed, besides happiness in seeing the trees grow, bloom, and become loaded with fruit, which can not be measured by dollars and cents.

LIST OF PEARS.

The standards are: Beurré Giffards, Bartlett, Sickle, Sheldon.

The Dwarfs are: Louise Bonne de Jersey, Duchesse d' Angoulême.

CHERRY ORCHARD.

The Early May is to the cherry, what the Rawle's Jannet, is to the apple, the Sheldon to the pear, and the Concord to the grape—the stand-by.

My trees are planted ten feet apart each way, and bear well the seasons that the cherry hits. For the first few years I plowed among the trees; the last ten years the ground has been in grass. If I were to plant again, I should plant twenty feet apart, each way. The cherry is not so well colored, and not so sweet, when the trees are crowded. The plum stone Morello is a good late cherry, and bears nearly every year.

The English Morello I find to be the best cherry for pies and canning. I have twelve trees of this variety, and for the last ten years, have placed annually around each tree, a wheelbarrow load of manure. My trees are very healthy, and bear almost as well as the Early May.

THE CURRANT.

No fruit gives a more generous return for good cultivation, than this; and though it will grow in almost any soil, yet to have really fine fruit, the ground should be well prepared by bountiful manuring, with well-rotted stable manure, and deep and thorough plowing.

In planting, the roots should have plenty of room so that they may be spread out in their natural position; and the earth should be carefully drawn around them, so that after the ground settles, they will be no deeper than they stood in the nursery.

No plant or shrub suffers more from cramping the roots, and from deep planting, than does the currant. This fruit requires much more room than is generally allowed to it. For large plantations, the rows should be six feet apart each way, admitting horse culture without danger of rubbing off the fruit, or injuring the bushes.

Mulching with straw, is recommended by some to keep down the weeds. I find this makes such a harbor for insects that I have been compelled to dispense with it. If the bushes are not mulched, they should be plowed three or four times every season, thus keeping the ground loose, and the weeds down. In the Fall, a good supply of well rotted manure should be placed around the bushes, to be worked in, in the Spring. The currant is a great feeder, and the difference between fruit raised under the cultivation here recommended, and that which it generally receives, will astonish those who have left it to care for itself.

Much is said about growing the currant as a tree, but in practice with us it is "no go," as bushes so grown are short lived. A better way is to allow about six or eight shoots to come out at the surface of the ground, and practice the renewal system. Every three or four years, as the old wood becomes stunted I cut it out, having the year previous to this operation, permitted young shoots to come out at the base of the old ones, to take their places. In this way my bushes are kept healthy, and vigorous, and will continue to bear good crops for many years.

I have most of the newer varieties under cultivation, but have seen no decided superiority over the red, and white Dutch, and it is with the currant as with other fruits. A farmer should plant those varieties which have proven themselves to be good, profitable and hardy, leaving the fancy sorts for amateurs.

THE GRAPE.

With the very low price of foreign fruits, if we expect to bring grapes into universal use, they must be offered at very

low rates. I give below the plan that I have tried ever since 1860. I have always had a good market; in fact, it is the most profitable of any fruit that I grow, and I have never failed to have a good crop since 1864.

My grape roots I plant twelve feet apart, each way, and always cultivate toward the grapes, thus forming a mound where each plant stands. I have generally grown corn, or vegetables among them, cultivating with the plow, giving good clean culture, letting the grape have its own way, for the first two or three years.

When the vine is six or eight feet long, I lay it down in a circle around the parent stem, covering it slightly with dirt. It now takes root. After this I prune and cultivate as I would the currant, sometimes putting brush under the grapes, to keep them off the ground.

One of these stools frequently yields one hundred pounds of grapes in a season. I have less trouble to sell two tons of grapes now, than I had to sell one hundred pounds in 1865. The farmers come and get them, by five and ten dollars worth, to make into pickles and preserves.

Of course grapes grown in this way are not as good as where only ten or twenty pounds are grown to the vine, which is staked up from the ground. The only grape that I have tried this way is the Concord, and this would probably not be a success with high-priced land — financially.

BIRDS.

I need not argue the necessity of birds in profitable orchard management. For the past five years, in the Summer months, I have placed in the orchard a box containing fifteen or twenty bushels of oats, and have also kept a trough of water, replenished daily, for the use of the birds. The quail, robin, dove, and blackbird, tame the easiest. The dove, raises several broods during the season, and becomes so gentle, and tame, that I can almost lay my hand on her.

It is a pleasant thing, at daylight to hear hundreds of birds sing, as they come to get their breakfast, and to bathe in the

water in the trough. It is true, the birds destroy some apples and cherries, yet, as an offset, some years I raise three thousand bushels of apples, with scarcely a wormy apple in the lot.

THE MORTGAGE BAD FOR FRUIT.

The orchard is the first to feel the effects of the mortgage; in many cases in a few months after the loan is effected, the cattle and horses are permitted to range at their pleasure, among choice vines and trees; the fruits of long years of patient toil are destroyed. In a few years, disheartened and discouraged, the farmer, like the Indian when he first sees the quails and bees come, knows his hour has come to go West.

JAMES D. ADAMS,

ALTA, BUENA VISTA COUNTY.

Fine Stock County — Plenty of Range — Herd Law — Oats, Corn, Wheat, Flax and Clover.

Buena Vista county is situated in the northwestern part of Iowa, being the third county from the north line of the State, and also the third from the west line. It is very nearly all prairie, with only a small portion of timber along Little Sioux river, on the north line of the county.

THE SOIL.

The soil is of the best quality, deep black mold, without either flint or gravel, gently rolling, and producing a heavy growth annually of wild prairie grass. This county is on the dividing ridge separating the waters of the Mississippi from those of the Missouri, about three-fourths of the county descending gently toward the east, and the western part toward the southwest. Little Sioux river runs nearly through the north part of the county from the east to the west line, following nearly on and along the north line of the county.

The first settlement in the county was made on Little Sioux river in 1857. There were but few families in the county until after the Illinois Central railroad was built from Dubuque to Sioux City, in 1869.

ADVANTAGES.

No county in the United States produces better crops of grass or grain than Buena Vista county, with the same outlay in farming. The amount of grain and fat stock shipped from the county is astonishing.

The climate is unsurpassed for health and salubrity. Spring opens here generally in the latter part of March, and first frosts are had about the first of October. I have resided in this county ten years, and have never seen a frost sufficient to kill vines earlier than the middle of September. I have never seen a thaw in Winter sufficient to make muddy roads except once.

STOCK.

Hogs are the principal stock raised. My favorite breed is the Poland China. Within the last two years there has been a very large increase of cattle in the county, thousands of young cattle having been shipped in from the eastern part of the State. There came during the Winters of 1879 and 1880 many herds of from fifty to two hundred head.

CATTLE RANGE.

Iowa enables any county in the State, by a vote of the people of the county, to compel every one to take care of his own stock, thus saving hundreds upon hundreds of dollars to every farmer by dispensing with fences, except such as each farmer may see fit to build to care for his own stock. A lawsuit has never been brought against any owner for the trespassing of stock in consequence of poor division fences or otherwise.

No country in the world offers such inducements to a poor man to commence farming in as does northwestern Iowa. Good land can be had of railroad land companies at from five to ten dollars an acre, and the farmer with a good pair of

horses can break from one to two acres a day, and if broken in May, flax can be sown on the sod which will yield from seven to ten bushels seed to the acre, worth one dollar per bushel. This will pay all expenses of breaking the ground, and puts the ground in fine condition for a wheat crop the next season.

HERDING CATTLE.

Those who wish to raise stock must provide sufficient yards to properly shelter and prevent the cattle from roaming in Winter, when the grass starts in the Spring. I am but a few miles away from the herding grounds, where our stock are taken care of for the season for fifty cents per head. Such herds are kept every season in different parts of the county, and kept together by the herder who contracts to salt once a week; and such grounds are selected near a supply of water, so that their every want is supplied. Thousands of cattle are shipped from northwestern Iowa every season to Chicago market without having been fed any grain, getting very fat on prairie grass alone. There are some fine dairies started lately in this county.

CROPS

have never been an entire failure in the ten years that I have lived here. In a few instances my wheat crop has partially failed, so that my average yield was small—from seven to ten bushels—but my general crop in fair seasons for wheat has been from fifteen to twenty-five bushels. I average from thirty to sixty bushels of oats per acre, corn from thirty to seventy-five bushels to the acre. This latter crop has never failed in any season, except once when grasshoppers injured it some. I have never had grass fail to any extent.

ROTATION OF CROPS.

First, on newly broken prairie, sow flax, about three pecks to the acre. I sow as early in the season as the land is in good condition to break, which is when the grass gets well started to growing in Spring.

Second, wheat. I plow the ground as early in the Fall as possible after the flax crop is removed, and then before freezing, I harrow the ground thoroughly, and sow about one and a half bushels of wheat to the acre, as early in the Spring as the frost is out sufficiently to allow the working of the seeder and the harrow.

OATS.

Plow the wheat stubble in the Fall, the earlier the better, and sow oats, two bushels on an acre, as early in the Spring as possible.

CORN.

I plow deep, in the Fall, or if left until Spring, I do not plow quite so deep. When my corn is harvested the ground is ready for another flax crop. If I can have manure, I cover with a good coat before planting to corn.

This rotation brings me around to the corn. I follow this course for a series of years on my soil, but if I do not have manure, I do not sow with the flax, but seed with red clover, letting it remain for two seasons and then plow under and put on corn.

Clover is the best fertilizer. I sowed a field with it, about five quarts to the acre, in 1875, and I never saw a better growth in the Eastern States than it made. It was mowed and pastured three years. I found that where the second crop was cut late in the Fall, the roots were to some extent killed by freezing; but where the crop was not pastured off too closely, it stood the cold Winters very well. I sold the land to my brother, and in the Spring of 1879, he plowed this clover sod, about the first of May, and planted it, with other land, on the fifteenth of May, with corn. The land was all cultivated alike during the season, and when husked in November, the corn on the clover land yielded fully fifteen bushels (seventy pounds of ears) more than the other part of his field, where other crops had been raised for several years preceding. The yield on the clover ground was seventy-four bushels to the acre. His whole crop on the ninety-seven

acres averaged fifty-three bushels to the acre, allowing seventy pounds to the bushel in the ear.

WHEAT.

In the year 1874, I sowed forty acres of wheat, on land that had been in with wheat, oats and flax, the previous year. I sowed about thirteen acres of each. The ground after wheat, oats and flax were harvested, was plowed early in the Fall, across the land, where each crop had been raised, and all sown in Spring in two days, so that my ground was all farmed alike and together.

I sowed a bushel and a half of wheat on an acre. When harvested the wheat grown on the flax stubble was considerably larger in its growth than on either the oat stubble, or the wheat stubble, and of a much brighter color.

I cut my wheat with a self-raking reaper, and when going so as to cross the plats that had been sown with wheat, oats, and flax, I found the rake would bring off a larger sheaf as soon as the machine entered the flax ground, and the binders decided that there was one-fifth more wheat on this than on either of the other plats, where wheat and oats had been raised the previous year. The kernel of wheat on flax ground was also brighter and plumper than on the other land. I am well satisfied that it yielded from three to five bushels more to the acre than on the other land. The crop on the wheat and oat stubble appeared to be about alike. Since that season I have never seen a piece of wheat sown on flax ground which was not a fair crop, and always free from rust and blight, while wheat sown on corn stalk ground, in this part of Iowa, is almost every season more or less rusted and blighted.

FLAX.

I would not recommend flax as a general crop, for the reason that it seems to exhaust the strength of the soil more than other crops, but whenever I do raise it, I shall follow with a wheat crop. I find also, that corn, when it follows flax, will not make near as fine a crop as on land where some

other crop precedes it. Almost invariably, I have better corn crops after oats than after any other small grain.

I would never plant corn on flax stubble ground, in any case, without manure, and I would never sow wheat on corn stalk ground, expecting a good crop.

SAMUEL REED,

ALGONA, KOSSUTH COUNTY.

Corn — Farming Implements — Cattle — Hogs — Fruit.

Kossuth is the largest county in the State of Iowa. Algona, the county-seat, is situated in the southern part of the county on the bank of the Des Moines river, which runs nearly through the center north and south, with smaller tributaries. These streams afford an abundance of good water for stock, and have belts of timber on one side or the other, although the heaviest body of timber is found along the entire length of the main river.

My farm contains about two hundred acres of what might be called level land, although it has fall enough to drain most of the tillable land. In the northwest corner I have a forty acre lot of pasture land, set in Kentucky blue grass and red top. This I use for early and late grazing. The prairie affords good range for our stock, so that I have but little use for tame grass. In the southeast corner I have a thirty acre pasture. I use eight acres of the western portion for colts and calves. This meadow has been used for ten or twelve years without plowing up. I put well rotted manure on it every few years, harrowing it well just as the frost is going out of the ground. That makes it take a new start to grow, and the seed that falls off makes it abundantly thick for grazing purposes. This pasture is set in timothy and red top mixed. The eastern portion I use for hogs. This part is sown in timothy and red clover

mixed. Every few years I plow up this pasture and seed it down again as at first, as pasture that is used for hogs will soon run out. The first year after seeding it should not be grazed.

The remainder of my farm I devote to raising corn, although a portion is used for wheat and oats—just enough for domestic use. "Corn is King." I have found that it pays better to feed it to cattle and hogs, than to sell it by the bushel. By this method I can sell the entire crop including the growth of cattle and hogs, thus ending any further trouble.

CORN.

In raising corn the more manure, the better. This I put on land immediately after small grain is cut. Then I turn under stubble and manure, the deeper the better. The Spring following I stir again lightly. Then I mark, harrow, and plant about the tenth of May. I follow at once with a harrow. I keep it going till the corn comes up. As soon as the rows can be followed with a team, I begin to plow with a two-horse sulky plow; the first time going through I do not let the shovels run in very deep. I use shields on next to the corn, while it is small, each time going through setting the plow a little deeper. The second or third time going through I take off the shields and turn the dirt up snugly to the corn. I plow till the sixth or eighth of July. The corn stalks I break down after the cattle have eaten all the blades and husks. This I do by dragging a log over them in cold weather, which makes it good for plowing. Now it is ready for harrowing, marking and planting, the same as was done with stubble land. I seldom put corn on the same land two years in succession, as changing it gives a better chance to put on manure. By this method I have never failed to get a good crop.

FARM IMPLEMENTS.

I use the Norwegian plow for stirring my land and the double-wing Scotch drag for harrowing. I find the two-horse Sulky Dexter plow excellent for cultivating corn, and the Union corn planter for planting; also the Van Brunt seeder

for sowing all kinds of grain, and the Walter A. Wood's combined reaper and mower.

COST OF RAISING GRAIN.

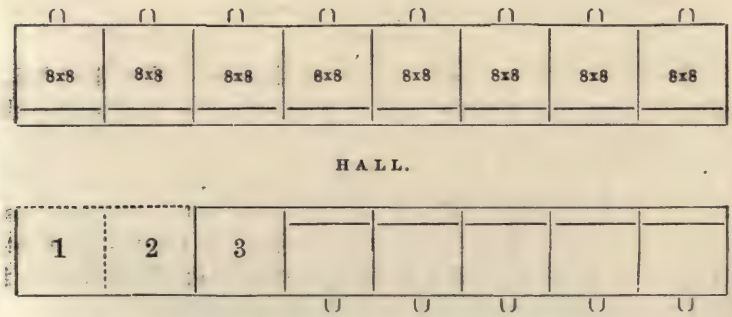
My wheat crop in 1879 cost me 69 cents per bushel.
My corn crop in 1879 cost me 15 cents per bushel.
My oat crop in 1879 cost me 13 cents per bushel.

CATTLE.

The best cattle I have for beef are the Short-Horns. Many of them are fine cows for milk. My milk cows consist mostly of grades and Short-Horns. I find them almost universally better milkers than the native cows.

HOGS.

The Berkshire and Poland China hogs are the best for early marketing. Raising hogs is a branch of stock growing which can be done very easily, when well understood. The first thing to do is to have a good dry house for the sows and little pigs while they are sucking, made on the plan of the following or some such diagram.



1—Feed room. 2—Steaming feed room. 3—Well room.

This house should be inclosed with a yard, to prevent the sows traveling off too far while the pigs are young. In breeding, to have success with pigs, they should come about the first of April. A short time before sows have their pigs, I feed

them on a slop made of roots, meal, corn, bran, etc. I also feed salt, charcoal, sulphur, ashes and saltpeter.

FEEDING.

In feeding the sows on such feed, the little pigs soon learn to eat. Then I make a low flat trough to feed them milk, boiled meal, etc. I continue this kind of feed till they can eat corn, after which I give them boiled corn, barley, oats, meal, roots, or any thing else that they will eat. This kind of feed is kept up for two months, and then I take away the sows. The sows I put in a pasture and feed dry corn, water, etc. The pigs remain in the yard till they are about three months old. They are then put in a pasture and fed as before. My theory is, that a hog that does not eat much will not amount to much. Feeding strong while pigs are young will expand the stomach and increase the size of the hog. I continue this feed till green corn is big enough to cut up. Stowell's Evergreen corn I believe to be the best for early feeding. Stock hogs while in pasture, should have a house to sleep in at leisure, as in the diagram. They remain in pasture till green feed fails, when I take them out and put them in a close, warm place and feed them on corn till ready for market.

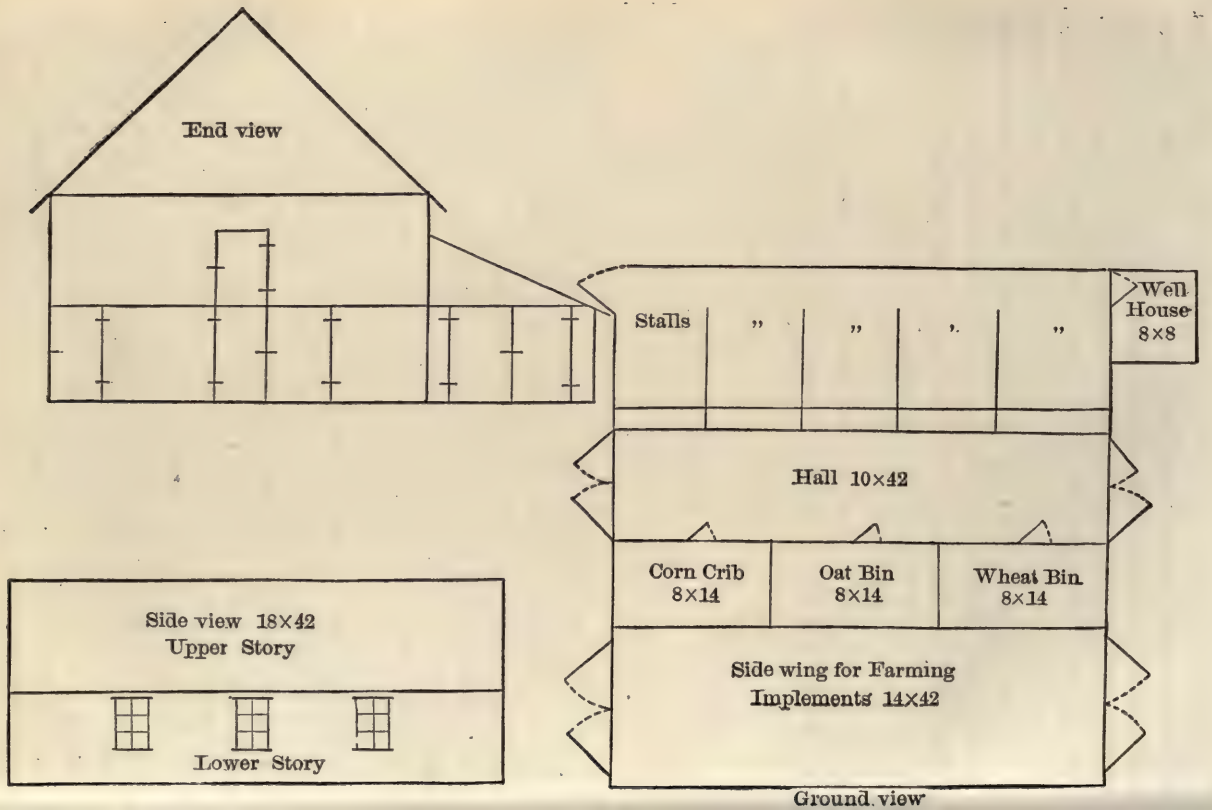
FRUIT.

My first efforts were a partial failure. The first lot, I ordered from the South, and it proved to be too tender for the climate, and could not stand the cold Winters. The second I ordered from the North. With a few exceptions, these proved to be hardy. The third lot were from a nursery near home; they proved to be equally hardy. In the two last lots, many of them were of the same varieties that I purchased in the first lot, and which had proved so tender.

APPLES.

I have raised nineteen kinds of apples this year. Most of them seem hardy and have stood the test from ten to fifteen years. My method for raising apples for home consumption is as follows: first I select good dry land, and then put it in a

PLAN OF BARN.


End view
Stalls
"
"
"
Well House 8×8
Hall 10×42
Corn Crib 8×14
Oat Bin 8×14
Wheat Bin 8×14
Side wing for Farming Implements 14×42
Ground view
Side view 18×42
Upper Story
Lower Story

good state of cultivation for planting. I set the trees in rows twenty feet apart each way. I dig the holes large and deep, filling up with rich surface soil, to about twelve inches of the top. I then place the tree, straighten out all the roots, and pour on half a pail of water, then fill in with good soil, pressing it lightly about the plant. I mulch with straw or manure, to prevent the sun's drying the roots. I prefer trees that are three years old to plant, when I can get them. I let the branches start out about three feet from the ground. I do but very little trimming with a pruning knife, as heavy pruning causes black heart or dead wood in the tree. All sprouts that are starting where I do not want them, I remove by rubbing while the bud is small; the wound will heal in a short time. In the Spring I wash the bodies of the young trees with lime-water or strong soapsuds, to prevent insects from breeding in the bark. At the same time, I keep the land well cultivated between the trees, until they are old enough to bear, then seed it down, and keep it well mowed. This should be well fenced, to prevent stock from injuring young trees.

W. H. WIDNEY,

CLARINDA, PAGE COUNTY.

Location — Description — Horses — Cattle — Hogs — Plans — Hedges.

MAPLE GROVE STOCK FARM.

Page county is in the southern tier of counties, and the furthest west save one. The surface of the county is undulating, and it is so well supplied with natural drainage, that but little swamp or marshy land, is found here. The land is very productive, and withstands the two extremes of wet or drouth well. The climate is very healthy and mild. It seldom rains in Winter, and the atmosphere is dry. There is excellent surface water for stock on almost every quarter section. We have fine church and school facilities, and rail-

roads are plenty. The Chicago, Burlington & Quincy road has two branches from its main line across the county. One from Villisca, on their main line, down the Nodaway river to Burlington Junction, on the St. Louis & Council Bluffs railroad, with stations at Hepbury, Clarinda, Stickley's Mills, and Braddyville. Another branch runs from Red Oak, through Essex and Shenandoah to Hamburg. The St. Louis & Council Bluffs railroad, also runs through the towns of Blanchard, Bingham and Shenandoah, all in this county, so we are well supplied, having nine railroad stations giving us an outlet to Chicago and St. Louis.

The St. Louis & Council Bluffs road is just finishing a branch from its main line near Burlington Junction, in Missouri, up the Nodaway to Clarinda, with two stations besides Clarinda in the county, which will make eleven stations. Here is a good chance for those seeking cheap and pleasant homes, as there is plenty of good timber, and abundance of bituminous coal in the east part of the county. So much for the county. Now for the farm.

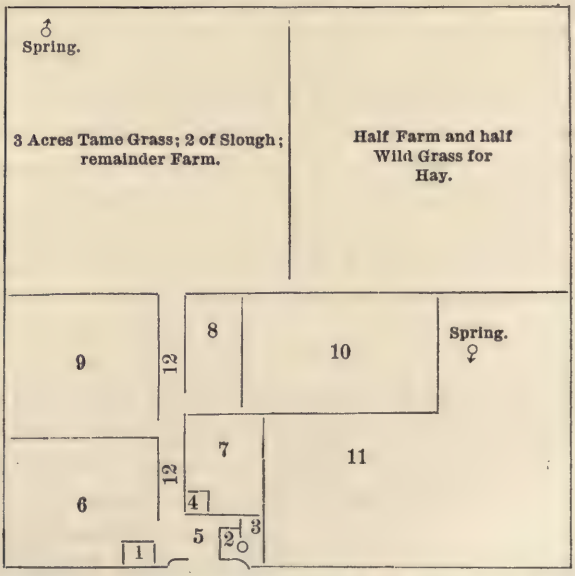
DESCRIPTION.

Maple Grove is devoted to both stock and grain raising. I have nearly one hundred acres in cultivation, and the remainder in tame and wild grass, which are used for pasture and hay. My hog pasture contains eight acres, with a three acre artichoke patch adjoining. This I consider a great benefit to my hogs. My farm has an Osage hedge all around it, most of which is large enough to turn stock. The north eight acres have hedge across, cutting the land in two in the middle. There is a twenty-five acre pasture in the southeast forty, with a fine ditch spring, which affords water sufficient for five hundred head of stock. I have a fine spring in the northwest forty, that furnishes water for one or two hundred head of stock.

The orchard is situated in the southwest corner of the southwest forty acres, and consists of five and one-half acres, with two hundred and fifty-one trees just coming into bearing.

The orchard has four rows of maples on the north and west, and three rows on the south and east. There are besides, rows of soft maples on the north, east, south and west of the feed lots, which with the buildings afford protection from the winds in Winter, and shade in Summer. The southwest forty acres have the buildings, feed lots, the orchard, a field of twelve acres north of the orchard, and the hog pasture, also a lane, twenty feet wide, crossing it to the north eighty acres.

PLAN OF THE FARM.



O—Stock well. 1—House and yard. 2, 3—Feed yards. 4—Hog house. 5—Stable, granary and crib. 6—Orchard. 7—Hog pasture. 8—Artichokes. 9—12-acre field. 10—20-acre field. 11—25 acre pasture. 12—Lane.

HOGS.

I breed the Poland China hogs, of which I have a large number of very fine ones. I breed from twenty to twenty-five sows each year, which raise me from eighty to one hundred and fifty pigs yearly. My sows farrow in April, May, and June. As soon as my young pigs will eat it, I feed them on shelled corn, soaked until it is almost ready to sprout. I give

them all they will eat of it. I also feed swill made from the dish-water, and milk thickened with oats, rye, and corn, all ground together. I wean the young pigs at two months old, and fatten the sows for market, with the exception of those I keep over for breeding purposes. Nearly all the male pigs are castrated at about two months old; a few of the very best, however, are saved for sale as breeders. All that are not sold or kept for breeders are put on the market at ten or eleven and one-half months old, when they will weigh from two hundred and fifty to three hundred and fifty pounds, gross. I sell my brood sows that are fattened, in December. I get male pigs each year from the best breeders of this stock. I think the Poland China is the best breed of hogs for this country. I might add that while the sows are suckling their pigs, they are fed all the best swill I can make for them, believing that a good start is of great importance in raising good hogs, as well as other stock. I am surprised that so many farmers take so little interest in the improvement of their stock. Men who show judgment in most other matters, frequently show the poorest kind of judgment in this.

I have been breeding the Poland China for fifteen years in this State, and while I have never exhibited at our State Fairs, I have taken many premiums and sweepstakes at other fairs. My hog house is twenty by forty feet, with a four feet feeding alley and eight breeding, and four fattening pens.

HOG HOUSE.

6x8	6x8	6x8	6x8	8 feet square.	8 feet square
Feeding alley, 4 feet wide.					
6x8	6x8	6x8	6x8	8 feet square.	8 feet square.

This is a ground plan of the hog house. I can put in

twelve sows at once, in separate pens, to have pigs, and if need be can fix the feeding room to hold half a dozen more small ones. My hog house is only two feet high at the eaves. It is all covered over, but the pens have no floor. I prefer the bare ground. The hog house stands in the corner of the pasture, so that I can let each sow out on grass a couple of hours each day.

HORSES.

My horses are of mixed breeds, some of them Normans, having a cross of Hambletonian. This cross has given me some very fine colts.

CATTLE.

The cattle are grade, or what is generally called full-blood Durham. They are bred for milk, butter, and beef.

HEDGES.

I have about four miles of Osage hedge on the farm, most of which will turn stock, and am getting it plashed down as fast as it is large enough to plash, so that it will turn hogs. As soon as our hedges will turn them, I intend to try sheep, believing this country is well adapted to that branch of stock raising. If sheep are properly managed, and are selected from the right breeds, they will pay as well, if not better, than any other kind of stock.

W. H. FITCH,

JACKSON, CALHOUN COUNTY.

Description of Farm — Stock — Cattle — Hogs.

This farm is located in Jackson Township, Calhoun county, Iowa, and comprises three hundred and ninety-five acres; it is devoted to the dairy and stock raising. The soil is a black loam, peculiarly adapted to corn and grass growing. One hundred and twenty acres are in grass, which serves as pasture for the dairy. As yet, none is in meadow, owing to our

close proximity to the prairie, which furnishes an ample quantity of good hay for feeding all the stock kept on the farm, and also affords pasture for the young stock during the Summer. From one hundred and fifty to two hundred acres are usually planted in corn on my farm, and on some smaller lots not adjoining; the remainder are planted with oats, as we raise but a small quantity of wheat. I feed all the grain to my stock, and although I have lived here twelve years, I have never hauled a load of corn to the railroad. The farm is watered by wells and wind-mill power; there is a fine spring, too, which, with Lake creek, provides good facilities for watering the stock; the same power that pumps the water grinds the feed used on the farm.

STOCK.

My stock at present consists of one hundred and fifty head of cattle, fifteen horses and one hundred and seventy-five hogs.

A dairy of fifty cows form the nucleus for the stock operations, and with an ice house, milk-room and the Cooley creamer, I have all the appliances necessary for making an article of butter that will command a good price, and is contracted for by the year, in advance. In ordinary seasons the cows pay for themselves each year. My stock are grade

SHORT-HORNS,

with a small herd of thorough-breds. Each year I feed and turn off two car loads of grade Short-Horn steers.

Stabling is supplied for sixty head of cattle. The dairy cows are all stabled during the Winter, and receive a daily allowance of good hay or mowed oats, and two quarts of corn meal, and two quarts of oats. No stock is raised save from thorough-bred sires, consequently they continually improve.

My plan is to herd the young stock on the prairie in Summer, and turn them into the stalk fields and on prairie hay in the Winter, until February or March, at which time the steers are put upon one-half or two-thirds feed of corn until grass comes.

HOGS.

I grow the Poland China hogs, raised by the dairy and

finished up in the Winter by following the steers that I feed every Winter on the farm. My experience has been that pigs that follow the cattle all Winter, and are fed for the June market, average better hogs at twelve months, than they would ordinarily at a year and a half old. All hogs are raised on grass in its season.

BARNS.

One of my barns is thirty-eight by forty-eight, with stabling on three sides; the two other barns are built in the form of an ell, one being twenty-four by thirty-six feet, the other twenty-four by forty-eight. The smaller barn is used exclusively for stabling below; the other contains a corn crib seventy-two feet long, with a meal room to hold feed for two stables. Sheds are provided for all stock not stabled, and in Summer time a portion of this stabling is used for sows in farrowing time, and also for shelter.

I commenced operations on this farm twelve years ago, and like all settlers in a new country began with limited means. I therefore make no pretensions to being a model farmer.

GEORGE W. BANISTER,

CHEROKEE, CHEROKEE COUNTY.

Historical — Descriptive — Improvements — Methods — Stock — Grain.

HISTORICAL.

I came into the Sioux Valley in the Spring of 1856. I was then a young man. I preëmpted one hundred and sixty acres, married in the Fall, and lived through one of the severest Winters ever known in this part of the country, in a log cabin with fire-place at one side and a snow-bank at the other. Provisions were scarce and high, and during the Winter the Indians killed one of my oxen. I fenced about twenty acres, and had it under cultivation, but in 1861 I rented and went to Colorado, returning in the Fall. In the Fall of 1862, came the news of

the Indian outbreak in Minnesota, and I learned that people were being killed within sixty miles of us. I took my family and left our home on the 25th of August, and traveled forty miles to Smithland, where I left them and enlisted in the 6th Iowa cavalry. I served on the frontier until October, 1865. I remained in Sioux City until Spring, then returned to my farm. Becoming dissatisfied, I bought a mill near Cherokee, and ran it for a few years, then received back the farm, since which time I have labored hard to make it successful.

DESCRIPTION OF FARM.

This farm consists of three hundred and twenty acres, about one-half of which is under cultivation. It lies in the Little Sioux Valley, on the west side of the river, and is a mile and a quarter in length, the south half being a square, and the north half an ell. The south half comprises nearly all the farm land and slopes gradually to the east, skirting the bluff on the west, thus being mostly on the river bottom, and above high water. The valley road runs along near the west line the whole distance of the farm, while near the center a road approaches from the west. The house stands on the north half near the middle of the farm north and south. Just north of this is a small creek skirted with high banks, affording the best of shelter for stock, and good spring water at all times of the year. This stream is fringed with a fine little grove of burr-oaks, that have mostly grown up in the last ten years, and are now about fifteen feet high. Crossing this stream on a bridge, and then passing a plum thicket we soon come to the north eighty acres, which lie east and west, extending across the river. A portion of this tract near the road is in cultivation, and the rest next the river is in excellent grass land; sometimes, however, it is subject to floods. A small body of timber skirts the river, and just below this, inside of a bayou, is a fine grove of ten acres. Between this grove and the creek lies a field, part of which has been planted in maple trees, the rest being designed for an orchard.

My land is dry, rolling prairie, with abundance of springs

and streams of the purest water. It has the peculiarity of producing good crops with little rain. We seldom have too much rain, and yet in a few hours after a heavy shower our ground can be cultivated. This is due to the looseness of the soil. This season we have had but a small amount of rain, and yet crops have done well. I consider the whole Missouri slope the best part of Iowa for farming, but scarcity of timber is a drawback. A great deal of timber has been planted within the past few years. The magnetic well at Cherokee is attracting much attention. The water flows in a continuous stream, from a depth of two hundred feet. A piece of steel, placed in the water, soon becomes magnetized.

IMPROVEMENTS.

My house is a story and a half high, the main building being sixteen by twenty, with an ell on the south side. A fence encloses the house, and a small orchard and garden lie south and west, while on the east is a wood yard, enclosing corn cribs, granary, and sheds for machinery. Just north of these still stands the old log cabin built by me in 1856. A lane extends from the road to this yard north of the house; north of this lane is a hog lot, consisting of three acres, extending across the creek and enclosing a grove of oaks. East of the house and across the wood lot is a banked stable and small cattle yard, opening on the east into a pasture that extends east and south to the river. The orchard contains several Siberian apple trees in bearing. There are few farms enclosed in this county; part of mine is left unenclosed. Stock here is herded or kept in pastures. South of my house was a piece of about four acres that I sowed in timothy, but when the grasshoppers visited us in 1876, they sowed it so full of eggs, that I spread straw and burned it to kill them; afterwards I plowed it up.

METHOD OF FARMING.

The system which I pursue is to have a rotation of corn, wheat, and oats or barley. The ground intended for corn is usually plowed in the Spring, while stubble which I intend for oats or other crops is plowed in the Fall. The wheat sown in

stalk ground I plow in with a cultivator. I plant corn as usual, by hand or horse planter.

STOCK.

Since 1873 I have turned my attention to raising stock more than formerly. In the Spring of that year I had two good mares for a team and two hundred and forty acres of land, a yoke of oxen, three or four cows, and some young cattle. In the course of the season I lost both of my mares, which left me in rather a bad shape for a team; but I purchased more, and commenced raising colts. In 1878 I had twelve head of horses, and concluded to sell off part of them. In 1875 I had a good crop of corn, and in the Fall I sold over twelve hundred dollars' worth of hogs. During the season I sold about three hundred dollars' worth more. That year the grasshoppers came in the Fall, but as my corn was planted early they did not destroy it, although it was somewhat injured, and I was obliged to reduce my stock of hogs materially. I have never raised as many since. I do not raise cattle as extensively as some do, only raising what I can conveniently take care of without herding. I will sum up the profits of cattle-raising here:

1st.	Calf in Fall worth - -	$7 00	
2d.	Yearling, " - - -	15 00	
3d.	Two-year old, " - -	25 00	
4th.	Three-year " " - - -	35 00	
Gain at three over calf, - -			$28 00
Cost of herding three years, - -		3 00	
Wintering, - - - -		17 00	
			$20 00
Net profit, - - - -			$8 00

COST OF RAISING HORSES.

1st.	Yearling colt, - - -	$20 00
2d.	Two-year old, - - -	30 00
3d.	Three-year " - - -	40 00
4th.	Four-year " - - -	80 00

Put cost of stallion as part of value of colt,	$10 00
Colt when foaled,	10 00
Cost of herding three years,	10 00
Wintering three years,	30 00
	$60 00

Net profit over cost, twenty dollars; besides one season's work.

HOGS.

The cost of hog raising varies according to the supply of corn and the price it brings. The price of hogs here generally averages two and one-half to three dollars per hundred pounds, and it is supposed that a person realizes about thirty cents per bushel for corn fed to hogs when they sell for three dollars per hundred. With good care they are marketable at from nine to twelve months old.

I consider the Poland China hogs best, as they do very well for market as early as nine or ten months old, and can often be made to weigh five hundred pounds in eighteen months. A large proportion of the hogs in this section are shipped alive to Chicago.

Sheep have not been raised on this farm as yet, as the industry would not pay unless with a large flock, which would have to be herded on the prairie, on account of the lack of fences.

GRAIN.

In 1875 I raised from one hundred acres, fifteen hundred bushels of wheat, worth $1,200.

Cost of Seed,	$120 00
" Plowing,	100 00
" Seeding,	25 00
" Harrowing,	25 00
" Harvesting, at $2.00 per acre,	200 00
" Stacking,	60 00
" Threshing, at 10 cents per bu.,	150 00
" Marketing,	50 00
Total,	$730 00

Profit, $470, from which should be deducted rent, interest, and taxes, $470, leaving the net profit, 0. The next year, 1876, the cost was nearly the same, while in 1877 the crop was eaten up by grasshoppers. I endeavored to save it with a hopper-catcher, and on that one hundred acres I caught over twenty bushels of hoppers, not larger than a house fly, but I finally gave it up. In 1878 my wheat was badly injured, but was mostly cut. In 1879, I sowed on stalk ground about forty acres of Fyfe wheat, which blighted so badly that it was not cut. This wheat is an uncertain crop on stalk ground here, but Osaka does much better. Red clover was tried on my farm, but it seems to Winter-kill. Timothy yields about two tons to the acre, and is worth five dollars per ton.

We have abundant pasturage here on the prairies at present, and our prairie grass is very nutritious. There are large tracts of land lying uncultivated in some parts of the county, on which hundreds of cattle are herded from the 1st of May until October. It costs from sixty cents to one dollar per head through the season to herd them. Turkeys do well here. I feed young turkeys on sour milk and hard-boiled eggs, until they are able to take care of themselves. Corn meal will surely kill young turkeys. Geese are scarce. Of chickens, I prefer the Brahmas and Black Spanish. Of ducks, I have only the Mallard.

J. SIDDONS,

TROY, DAVIS COUNTY.

Profits Derived Largely From Corn — Rotation of Crops — Grass, Shade, and Water Essential to Successful Hog-Raising — How and When to Make Hay — Management and Care of Sheep.

My farm is located in Davis county, which is one of the southern tier of counties, and the third west from the Mississippi river. It comprises five hundred acres of land, principally prairie, there being about eighty acres of timbered land near

the center, running entirely across the farm from east to west, through the center of which runs a stream known as Hickory creek, taking its name from the large amount of fine hickory trees growing on its banks. Owing to the location of the timber, my farm is divided into two parts. My homestead is located just on the south side of the timbered land, thus affording a fine shelter in Winter from the north and northwest winds, for which this latitude is noted. It also affords protection from Summer winds, which, in more exposed situations, frequently blow off large quantities of apples of the larger varieties, before maturity, and occasion heavy loss. Another advantage of these trees is, that we have fuel in abundance, without drawing it from long distances, as many farmers have to do in a prairie country. Not the least of its advantages, in my opinion, is that it affords a fine woodland pasture in which to raise hogs. Other things being equal, I think grass, water, and shade, the three great essentials to successful hog-raising.

ROTATION OF CROPS.

My system of farming (if system it can be called) is intended to be what is popularly known as mixed husbandry, although I expect the profits to be derived largely from corn and grass. The other cereals I consider more in the light of aids in forming a rotation of crops, than in the actual profits arising from their cultivation.

My method has been to have, as nearly as practicable, one-half my cultivated land in grass, principally clover. Some portions, where the land is rolling, or liable to wash away, I keep in permanent pasture, or blue grass. I usually plant about one hundred acres with corn; the remainder are sown to oats, wheat, and rye; and I usually let a considerable amount lie fallow each year, believing it more profitable to raise a large crop every second year than to raise half crops every year. I seldom raise two crops of corn on the same land in succession; never, excepting on very new or fresh ground. This being a corn and grass country, I am satisfied that a larger profit can

be derived in a decade of years (if unable to adopt some rotation by which at least to get the cost of cultivation out of the small grains), by letting one-half the land lie fallow each year, as the increased crops and only the half expense in cultivation would more than counterbalance the trifling difference there might be in the yield in bushels; besides, there is the advantage of keeping the land in a fertile condition. I refer, of course, more particularly to the old and long cultivated farms of the county.

WHEAT.

My wheat is usually sown on fallow ground, and is always manured, except in the event of the land being new. The principal cause of failure in raising Fall wheat with profit in this latitude, is attributable to Winter, or more properly, Spring killing of the plant, caused by the alternate freezing and thawing of the ground in early Spring, and which not unfrequently raises the wheat plant and its roots entirely above the ground. My experience and observation have convinced me that such Winter killing may be obviated to a considerable extent by a liberal application of barn-yard manure in its green or raw state. Many good farmers prefer to apply the manure as a top dressing after the wheat has been sown, first having the manure thoroughly rotted; but to my mind, the latter method is calculated to lose too much that is valuable as plant food; neither will it furnish as good and efficient a mulch for the young plant as when applied in a partially decomposed condition. Observation has led me to the conclusion at which I have arrived on this subject. A chemical analysis, with the whys and wherefores, I leave for minds better versed in botanical and chemical lore than mine.

My wheat crops have been fairly successful, ranging from twelve to twenty-five bushels per acre. I do not raise wheat extensively, as I think it rather uncertain; at least too much so to depend on largely for profit. I raise oats, mainly because they count in my rotation. I usually have abundant crops, but there generally comes a few days about the Fourth of July in

each year (when oats are in a soft or milky condition) when the grain is very soon ripened, consequently is too light to be valuable. However, I have some seasons when oats do admirably, and are a very profitable crop. Rye does well with me, and when sown on land in good till (and by the way, it should never be sown elsewhere), it is almost always a sure crop.

GRASS.

When I speak of grass I feel that I am at the base of all successful farming in this or any other country. I think this section takes second rank with very few places in the Mississippi Valley as a grass-producing region. Perhaps we shall be compelled to yield the palm to the famed pasture fields of Kentucky, as her more Southern latitude and milder Winters give her opportunities to utilize her blue grass pastures that we do not possess. As I said at the commencement, I aim to keep half my land in grass, for therein is found my richest treasures and easiest made money. Besides, it is the only way in which I can keep the farm up to anything near its original fertility.

SEEDING DOWN.

My method of putting land down to grass is to plow it over as soon after harvest as practicable, then harrow down to as smooth a surface as I can, and sow the seed. If there is a probability of rain in the near future, I do nothing more; if likely to remain dry, I harrow once with a light harrow or brush. This is preferable to the plan usually adopted of sowing the seed on stubble ground in Winter or Spring, and then waiting two years for a very poor crop, whereas I get two-thirds of a full crop the first year. While on the subject of making hay, I must give you my method, also the time at which, if possible, I always have it cut. My plan I know will be found fault with by large numbers of our farmers. I always want my grass cut, if it is clover, when about one-third of the heads have turned brown, if in timothy when the second bloom has fallen; if both are combined I cut as near those conditions as it is possible, to get both kinds at

the same time. Many farmers prefer to have their timothy grass stand until nearly ripe before cutting, claiming that they get a larger yield, which I grant, but at a great sacrifice in *quality*. I hear many intelligent farmers remark that they can not winter their steers on timothy hay alone, for the reason they become so constipated, and their hair becomes so staring that they are compelled to give them grain. I believe the cause of the constipation is found in the fact that in maturing the seed the whole of the saccharine juices are extracted from the stem, leaving little but woody fiber, added to which is the loss of nearly the whole of the seed, which usually happens from the frequent handling. By this method you have an innutritious mass, just a little superior to wheat straw.

My method of making hay is to cut as above described, as nearly as may be; and when fairly wilted, if possible on the evening of the day on which it is cut, I have it raked and put into moderately-sized cocks, and there it remains for several days to cure, before I stack or house it. With such hay, I dare undertake to winter any kind of stock without fear of constipation, or any very serious deterioration of flesh, and without the aid of grain, unless, perhaps, in the case of calves or young colts.

FEEDING.

My method of disposing of our crops is to feed everything raised on the farm excepting wheat, and occasionally excepting rye, when it happens to bring a price at which we can substitute oats or corn with a profit.

HORSES.

I keep a variety of stock, and am doing a considerable business in horses. I breed Clydesdales which are my preference, being better adapted to all purposes of farm and road than any other single breed of horses in this country. They have better action, and more substantial feet and legs.

CATTLE.

I play the part of feeder rather than a breeder of cattle. I usually feed a small number each Winter, and sometimes feed

some cattle during the Summer. In fact, I think better profits can be obtained from corn fed in Summer than in Winter. I usually feed cattle one year younger, thereby getting greater growth. Such cattle have sometimes attained a growth of six hundred pounds each. They were Durham grades, two years old. I commenced to feed in June, and sold at Christmas.

HOGS.

I have been breeding Poland China hogs for several years. They are very good hogs; perhaps not quite equal to the Berkshire for very early fattening, but at sixteen or eighteen months old they will make more pork. For small farmers, the Berkshire proves the most profitable hog, more especially when the feeder is situated so as to be able to sell his shoats when they weigh one hundred pounds. They can be made to weigh that amount with less grain than any breed with which I am acquainted.

SHEEP.

I breed Cotswold sheep. They are better adapted to mixed husbandry than the fine-wooled varieties, being very much superior as a mutton sheep, and yielding larger quantities of wool, for which there has been a very fair demand of late years. I was the first to introduce the Cotswold into this country, by importing a carload from Canada about seven years ago, since which time a marked improvement in the flocks of the region has taken place. It is often remarked by sheep buyers that the best grade of sheep found in any portion of Iowa are to be found in this vicinity. My management of sheep is very simple, and not expensive. My ewes never drop their lambs until after the twentieth of April. The weather is usually warm after that time, consequently I have little trouble in looking after the lambs. The ewes are apt to lose their lambs when dropped in Winter, or early Spring. There is generally sufficient grass the last of April to give the ewes plenty of milk, so my lambs grow from the start. I wean them in August, so as to allow the ewes to get into good flesh before Winter. My Winter management generally con-

sists of letting them run in the stalk fields, and a blue grass pasture with a few hay stacks to run to in stormy weather. When the year comes around I realize larger profits from my sheep than from a similar amount invested in any other kind of farm stock, with the additional advantage of having my pastures enriched, as no class of stock will benefit pasture grounds as will sheep. This is in part accounted for by the fact that they more evenly distribute their droppings, and have an invariable preference for lying on high points of land, if their pastures have such elevations, which require most manure. I would say to those seeking homes in the West, especially those who wish to engage in stock farming, that to my mind there is no portion of the country that offers superior inducements to this. Our lands are cheap, a very necessary requisite to induce emigration. As a corn growing country, we are just about on an average with the rest of the State. For Fall wheat, our average is fair, but for grass, that great desideratum and base of all good husbandry, we are head and shoulders above every other part of Iowa, with the exception, perhaps, of two or three counties in the southwestern portion of the State, and are quite the equal of the best of those. We have probably quite as much timber in the northern part of the county as is found in any one county in the State. For coal, our store is limitless. The climate is similar to that of other portions of the country in the same latitude, with the exception that having more than an average amount of timber, we do not suffer from the Winter winds as much as those portions lying more exposed and bleak. So upon the whole, we think we have all the qualifications requisite to make farming successful.

SYLVESTER SMITH,

WAYNE, HENRY COUNTY.

Rich Soil — Drainage Absolutely Necessary — Rotation of Crops Potatoes — Stock.

Wayne is situated in the northern portion of Henry county, in a prairie township, not having over two hundred acres of native timber in it.

THE SOIL.

It has a black soil, about thirty inches in depth, and a clay subsoil. Both the soil and the subsoil are well calculated to retain moisture, and in a residence of thirty-eight years I find that crops are more frequently injured by excessive wet than by drought. Crooked creek on the north and Skunk river on the west, have good bodies of native timber.

PEAT.

I have dug two wells in my pasture, in both of which I went through two feet of peat at about eight feet from the surface.

DRAINAGE.

There is no subject now before the farmer of so much importance as that of draining. If we could draw off the surplus water promptly, our crops would be assured almost to a certainty. Machine ditching, both the open and what we term gopher ditching, have been tried, and failed, as they do not prove durable. Tiling is used now, but is rather an experiment as yet. What has been put in has been in sloughs mostly, not on flat land. One neighbor has put in two hundred rods. His main object is to get water for stock. He used three inch tile, and put it down five feet, but the water supply failed for a time last Fall. Those who have extended their ditches into the flat land, and put them in deeper have permanent water. There is no doubt but tiling will be

of great advantage to our level lands, and will be used as fast as possible, its cost being the principal drawback. Three inch tile costs from eighteen to twenty-two dollars per thousand, and twenty-five cents per rod for putting in three feet deep.

ROTATING CROPS

My farming is what would be called mixed farming, corn being the leading crop. Wheat is not raised extensively for market.

Experience has proved that it is best to rotate the crops, and as we raise more corn than small grain, we put in two crops of corn and one of small grain.

A DESTRUCTIVE WORM.

There is a small worm or maggot that works in among the corn, eating off the small roots, and sometimes destroying the whole field. Sowing to small grain has a tendency to destroy them.

PREPARING THE SOIL.

No artificial manures are used, but all that is made is carefully saved and put on the land. This, with an occasional grassing, keeps the land productive. The best crop of corn I have ever raised was on pasture sod, although I have raised nearly as good on meadow sod. My plan is to break my sod as early as possible in the Spring, break it deep, and turn the sod without breaking it, lapping it a little. Then harrow thoroughly once a week till planting time. I have raised seventy bushels per acre in this way, by simply cultivating the corn twice after planting.

MACHINERY.

I use the sulky plow considerably. It does its work in a superior manner, but the extra amount of team required is an objection. I use the two horse walking cultivator with wheels, exclusively. For harvesting machines, the combined machines meet with most favor at my hands, the Champion and Buck-

eye taking the lead. There are a few Harvesters in this locality, but farmers do not generally raise grain enough to make them pay.

YELLOW CORN.

I find the yellow corn and the yellow speckled do and yield better and are better for fattening stock than any other.

WHEAT.

I have experimented with numerous varieties of wheat, and am now raising the Pearl and Lost Nation. The Lost Nation is a smooth wheat, very long in the head, and ripens about the time of the Mammoth or Tea wheat. It is a fine grain, but liable to blight in the upper part of the head.

POTATOES.

The potato crop is very much neglected by farmers generally, and as I have had very good success for the last few years, I will give my plan. My rule is to plant one acre every year. I select a piece of dry ground in the corner or side of a field that is to be planted to corn, the first object being to get a dry place, as potatoes will not do well on wet ground, or if they do grow, the quality will be poor. If I have Fall plowing so much the better, stir both ways with a cultivator, and follow with the harrow. I then mark off both ways at the same distance that I would mark for corn. I cut my potatoes and put two pieces in a hill. I then take my cultivator and turn the shovels together, and cover them. I give them the same cultivation that I do my corn, and hoe them once if they need it. I plant Peach Blows mostly, but grow a few Early Rose and White Meshannocks. My one acre of potatoes has never failed to supply my family of eight, and I usually sell from ten to thirty dollars worth. I plant fair sized potatoes usually, but see no difference in the result when I plant small ones.

APIARY.

I keep a few bees, but do not find it profitable to sell honey. I lose some of my bees every Winter, and only find

an occasional season that is favorable for storing honey. I use the Langstroth hive, and Winter them out doors.

STOCK.

I usually feed all the corn I raise on the farm to my horses, cattle and hogs, and find that it pays well. After trying various breeds of hogs I call the Poland China best. They are as healthy as any other breed, and are of quick growth, and fatten easy at any age. But the hog disease has raged fearfully the last year. Not less than four thousand have died in this township in that time. I have found no remedy that will do any good after they become diseased, and I have but little confidence in any preventive. I saved part of mine (or think I did) by dividing them into small lots and moving them to fresh ground.

I am improving my herd of cattle by introducing the Durham stock. No other breed is raised here.

H. B. COX,

MISSOURI VALLEY, HARRISON COUNTY.

A Stock Farm — Corn — Pasture Feeding and Fattening Cattle — Economical Methods of Raising Hogs — Plans for Handling and Stacking Hay.

My farm is situated in Harrison county, eight miles from the Missouri river, and one mile from Missouri Valley Junction. The farm consists of one thousand and ninety-three acres, one hundred acres of which are native forest, and eight acres are in artificial groves, consisting principally of walnut, cottonwood and box elder. Six hundred acres are in cultivation, and fifty acres fenced for mow land. The remainder is commons.

CORN.

In the cultivation of the soil, I confine myself almost en-

tirely to the production of corn, which is converted into beef and pork before being marketed. In preparing the ground for corn in the Spring, the first thing to consider is the stalks left standing from last year's crop. As soon as the ground is sufficiently thawed, these I cut. A stalk cutter, drawn by two horses and cutting two rows at a time, is used for this purpose. This cuts the stalks into pieces about twelve inches long. I never burn the stalks, but leave every such thing on the ground, believing this does not exhaust the soil as rapidly as it would to burn them. The stalks being cut, my plow is started, which turns two furrows of twelve inches each and six to eight inches deep.

In an ordinary Spring I start my corn planter about the twentieth of April and follow up the plow as closely as possible. I use the Brown corn planter with Haworth's rope check rower attached. The last named implement saves marking off the ground, saves one hand in planting, and enables one to run the planter the same way that the ground is plowed as fast as it is plowed. I prefer the rope to the wire check-rower, because it drops more accurately on rough ground, is more easily operated, costs less, and, according to my experience, lasts about as long.

I plant corn three feet, ten inches apart each way, about three inches deep, and drop from three to five grains in a hill. As soon as it is well through the ground, I go over it and replant any hills that may be missing, using an ordinary spade for this purpose. When the corn is large enough, that is from two to three inches high, I commence to cultivate.

I prefer a two-horse walking cultivator; one manufactured by Furst and Bradley, of Chicago, gives me great satisfaction. This cultivator I run through the corn from three to four times, or as often as one team will go over fifty acres by the first of July, it not being expedient in my judgment to cultivate in our soil after that time. After this I go through the corn with the hoe and cut out all the larger and obnoxious weeds. My corn, all but about one hundred and ten acres, is husked by hand, and cribbed in the feed yard preparatory to feeding

cattle. I then turn on my cattle and hogs and they clean up the fields.

FEEDING CATTLE.

I usually feed about one hundred and twenty-five head of steers, one-half of which are of my own breeding, and are grade Short-Horns. I make it a point to Winter them well. The first season I allow them the range of the stalk fields during the day and at night they are put into a lot by themselves and given a good feed of corn.

My pasture is the common prairie grass. As soon as it is large enough in the Spring to afford good pasture, I brand the calves and turn them out with the other stock cattle. They are salted frequently and well cared for during the herding season, but I feed nothing until the pasture becomes dry in the Fall. I then commence to feed plenty of hay until the stalk range is ready, when I turn all the cattle into it, at the same time giving them free access to a rick of good hay. They are treated in this manner until the first of March, when they are turned into the feed yard and are given all the corn they will eat, until the pasture is again good, when they are turned out and treated as in the preceding season.

Each steer will eat two-thirds of a bushel of corn, and will gain on an average at least two pounds per day. I make my grade Short-Horns, when they are twenty-eight to thirty-four months old, weigh from sixteen hundred to seventeen hundred pounds. The natives that I buy will not weigh quite so much.

FATTENING STEERS.

I fatten them the next Winter or the Winter before they are coming three years old. They are usually taken off the pasture about the first of October and turned into a ten acre field of corn. When first put in I do not allow them to remain many hours at a time, but gradually accustom them to a full feed of corn. After the ten acres are eaten I turn them into a field of one hundred acres. Both these fields connect with the feed yard where I have a good spring of pure water. They also have access at all times to hay and salt. When this field

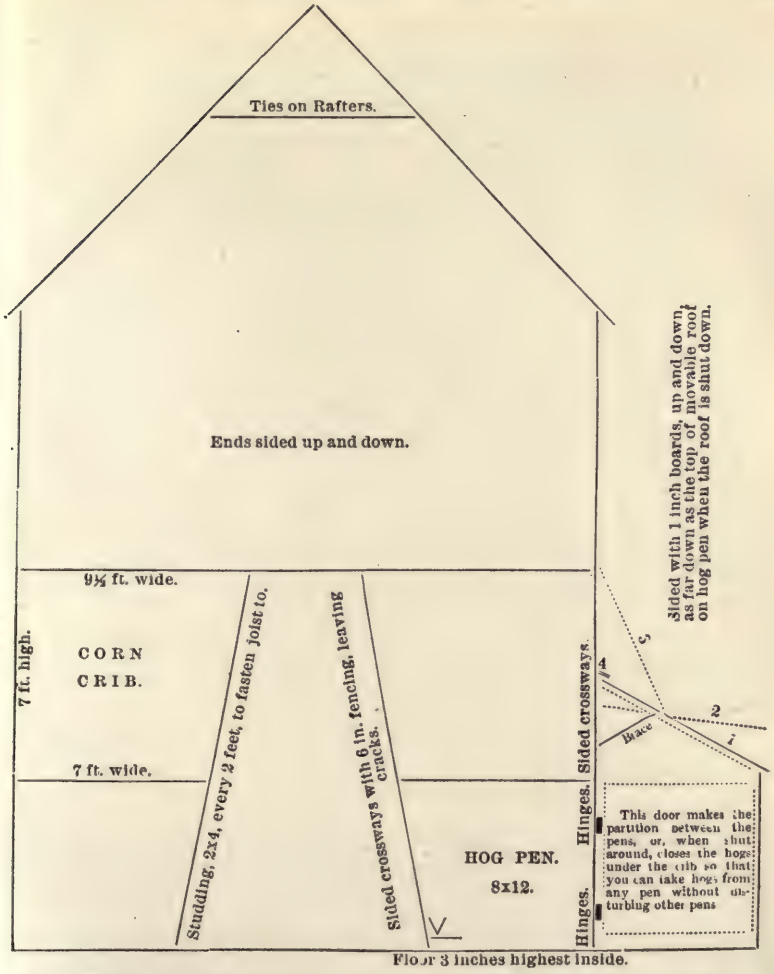
is finished, I turn them into the feed yard and feed them all they will eat of corn in the ear.

CORN CRIBS.

My cribs are so arranged that they are self-feeders; the troughs are constructed against the sides of the crib, and a crack about two and a half to three inches wide, is left in the crib on a level with the bottom of the troughs. This crack is arranged so that it may be closed up when desired to allow the steers to clean up, as we say, which is about once a week. The cribs and hay sheds are arranged so as to give the steers protection from the storms. The main crib is one hundred and forty feet long, with a shed twelve feet wide on the south side. The cattle can stand at the trough and at the same time have the shelter of a good roof. My hay shed joins the end of this crib, the feed steers having access to one side, and the stock cattle to the other. My feed yard is connected with an artificial grove by a tunnel passing under the main wagon road. This grove is situated on a southern hillside, thus giving the cattle ample room and good protection from the storms.

HOGS.

Of the several good breeds of hogs I prefer the Berkshire, and I believe them particularly well adapted for following cattle. They are more industrious, and in consequence of their lively habits, are less liable to contract the various diseases that swine of late years are heir to. I have twenty-five acres of blue grass fenced with a hog-proof fence, where I keep my sows and pigs during the Winter. My hog house is in this pasture. A week or so before the sow farrows, I put her into a stall by herself, where I let her remain until her pigs are about three weeks old. Then I turn them into pasture with my other sows and pigs of the same age, where they all have plenty of exercise and pure water. When the pigs are two months old they are put into a small lot with comfortable sleeping quarters, until they are weaned. They are then turned out into the pasture again, and a small lot arranged so that only the pigs can get in, where I give them extra feed. This is my plan for Winter


Ties on Rafters.
Ends sided up and down.
9½ ft. wide.
7 ft. high.
CORN
CRIB.
7 ft. wide.
Studding, 2x4, every 2 feet, to fasten joist to.
Sided crossways with 6 in. fencing, leaving cracks.
Sided crossways.
Hinges.
HOG PEN.
8x12.
Hinges.
Floor 3 inches highest inside.
Sided with 1 inch boards, up and down, as far down as the top of movable roof on hog pen when the roof is shut down.
3
4
2
1
Brace
This door makes the partition between the pens, or, when shut around, closes the hogs under the crib so that you can take hogs from any pen without disturbing other pens

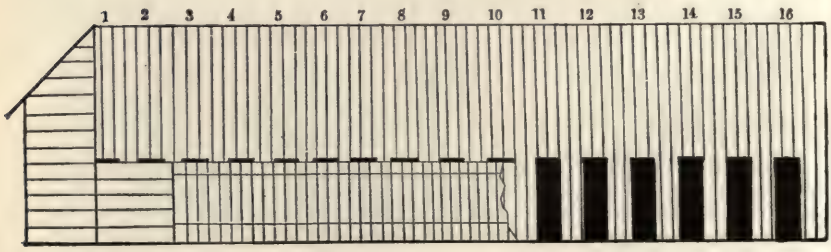
END VIEW OF HOG HOUSE, CORN CRIB AND HAY MOW COMBINED.

By making 4 ft. long, will give room for five pens on each side, 8x12 ft., and will accommodate sixty or seventy hogs. Cribs will hold 1,000 bushels corn, and mow 12 tons of hay. We have a cow and calf house built on the end, with hay over.

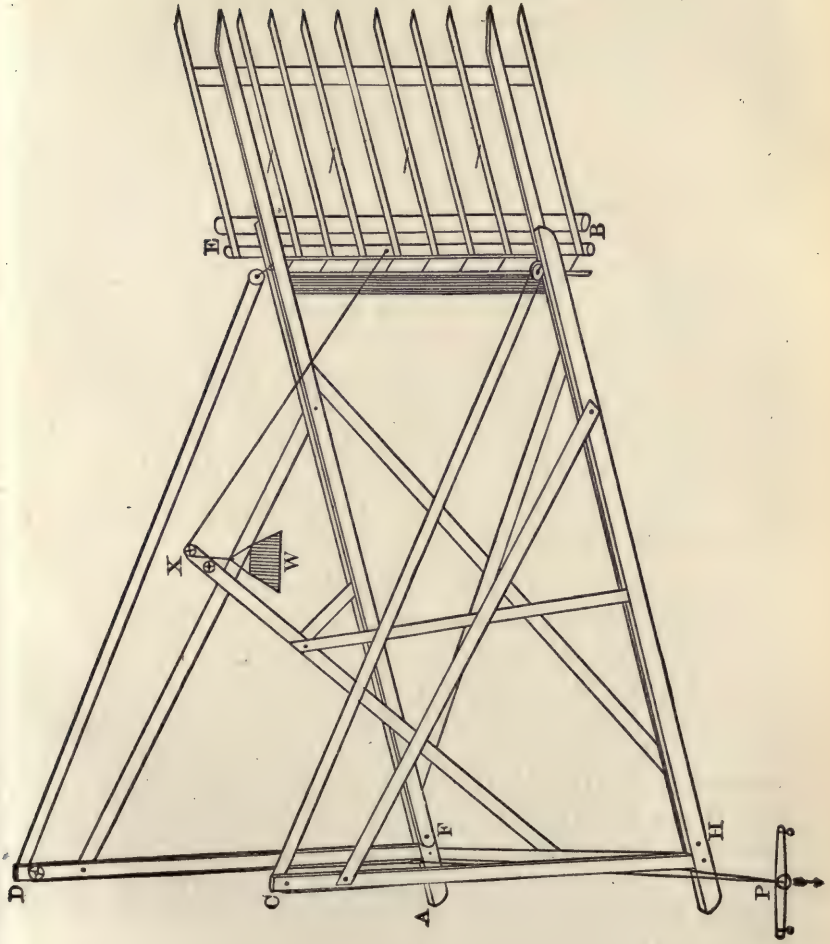
1—Movable roof on hog pen, made of 1-inch boards, 7 feet long, with 2x4 studding 20 inches from the top end, with piece of ½-inch round iron in each end projecting out and into studding, that extends from side of corn crib to outside of hog pen. 2—Roof, partly raised to admit of cleaning out and letting in air in Summer. 3—Roof, thrown open to admit the sunshine. 4—Weather strip, 10 inches wide, fastened on lower end of siding, and extending out over the top end of the movable roof.

treatment. In the Spring I turn sows, shoats and pigs into a six acre lot of Brazilian artichokes. This lot is connected with my artificial grove by a tunnel. As before stated, this grove is connected with the lot in which the spring is situated by another tunnel, thus giving the hogs uninterrupted communication with the spring of water. I keep the hogs in this lot until the middle of May, when I turn them into a field of ten acres of rye. This with the addition of a very little corn will feed two hundred and fifty to three hundred head of hogs all Summer. By this method my young hogs do not come so fast as to compel me to feed grain heavily, but at the same time I think the hogs are less liable to disease. The first of September I begin to increase their feed, and by October I have them on full feed and ready to go into the corn field with my feeding steers. Then I separate the brood sows from the herd, put them back in the pasture, and treat as before described, while the remainder run with the feed steers, and are sold from time to time, as they become marketable. I usually wish to have about three hogs to one steer; by having this number they keep the corn well cleaned up, thus preventing the waste that would attend feeding down corn in the field.

HOG HOUSE.



My hog house is ninety-six feet long, and six feet wide. It is boarded up and down with twelve foot lumber, which is sawed in two, so as to give the roof the proper slope ; that is, the shorter side about five and one-half feet high, the longer, six


E
B
X
W
D
C
A
F
H
P

and a half feet. It is divided into sixteen stalls, twelve foot lumber being used, projecting out six feet in front of the house. Against the ends of these partitions, and parallel to the front of the house, a tight board fence about three feet high is constructed, thus making each stall twelve feet by six feet, six feet square being under cover, and floored, and six feet square on the ground, where the trough is placed.

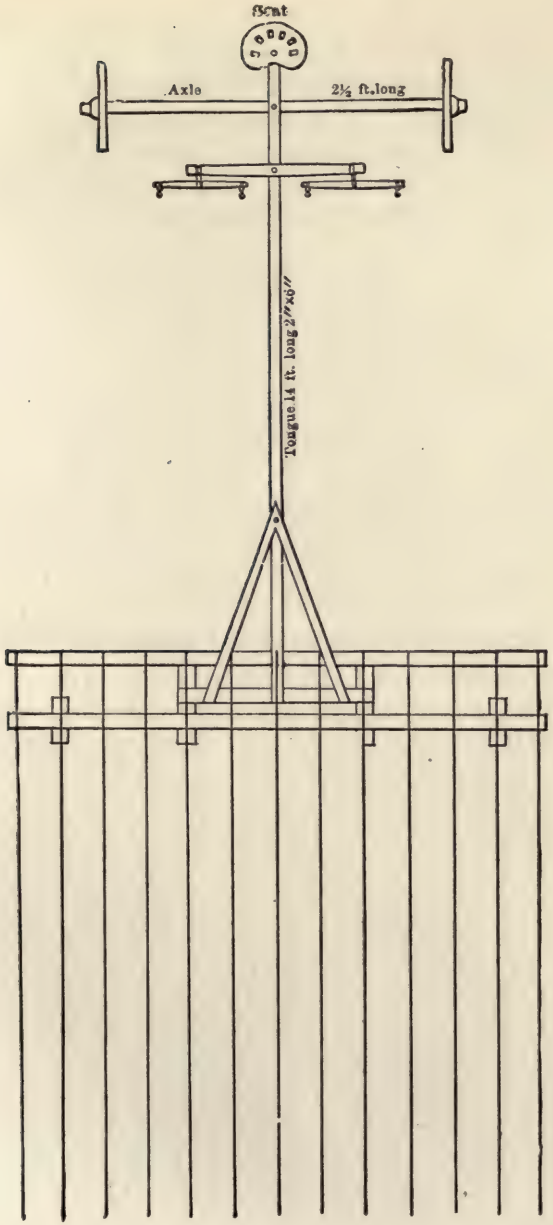
HAY MAKING.

My hay is the common prairie hay. I usually commence to cut it between the twentieth of August and the first of September. I use the Buckeye Junior mower, which being started, for example in the morning, the mown hay is not touched until after dinner the next day, when I am ready to commence stacking. For this purpose I use the Little Giant hay stacker, and two rakes, each about twelve feet long. To stack with these requires four men and five horses. The two rakes take the hay from the swath just as it was left by the mower, and carry it to the stacker. This force will stack just as much hay in a day as these two rakes will carry to the stacker, which will vary from forty to sixty tons.

LITTLE GIANT STACKER.

This consists of the foundation A H in the drawing, which is fourteen feet long and eight feet wide. The two uprights C D, are fourteen feet high; and the rake B E is about twelve feet long. The hay is carried on to this rake, and is elevated by means of two ropes, the ends of which are made fast to the two uprights at C and D, thence passing around the pulleys near B and E. These two pulleys are fastened to two beams, each two by six inches, attached by bolts, on which they revolve, to the foundation timbers at F and H. The rake rests on these beams.

From the pulleys at B and E, the rope runs through pulleys at C and D, thence down the uprights and through pulleys at their feet, thence to the point P, where the horse is attached. The horse pulling here, elevates the rake with its load of hay. When the beams to which the rake is attached


Seat
Axle
2½ ft. long
Tongue 14 ft. long 2"x6"

strike the uprights, the hay falls off on the stack. The weight, W, must be a little lighter than the rake, so that the rake in descending, will draw it up. This weight assists the horse to start the load, and continues to assist him, until it strikes the ground. As the load is drawn up from this point, the weight is again raised, and is thus suspended in the air ready to draw the rake down as soon as the horse is backed up.

To use the stacker, one man is needed to stack the hay, one horse to elevate it, and one man to drive said horse and keep all the hay cleaned up that falls back when being elevated; also two hands and teams to run the rakes.

THE FIELD RAKE.

The field rake, as illustrated on the preceding page, is about twelve feet long. It is so constructed that it will take up the hay just as it was left by the mower. The team is hitched to the tongue, as shown in the diagram. The driver sits on the seat, with one foot on the axle on each side of the tongue. The axle revolves about a bolt passing through it and the tongue. The wheels are ordinary cultivator wheels. The driver guides the rake with his feet. The rake being loaded with hay is then driven to the stacker, coming up squarely in front of the stacker rake; its load is pushed on to this rake, the teeth of the field rake passing between the teeth of the stacker rake. The team is then backed out, the hay being held on the stacker rake by the prongs, as shown in the figure.

SOIL.

My soil is a rich sandy loam, which is very remarkable for its power to withstand excessive wet or drouth. There is plenty of timber for firewood and fence posts, which is well distributed. The beautiful rolling prairies, the broad expanse of Missouri bottom land, almost every acre susceptible of cultivation, the far-famed Boyer valley, railroads leading north, east, south and west, villages, schools and churches, the dry and healthy climate, all combine to render this portion of our country a very desirable farming locality.

L. W. CLEMENTS,

PLEASANT VALLEY, SCOTT COUNTY.

Peaches — Manner of Planting — Cultivation — Secret of Success — Onions — Soil — Preparation of the Ground — Culture — Profits.

Nearly twenty years ago, in planting an apple orchard with rows two rods each way, I planted intermediate rows of peach trees, seedlings from Hale's early. The first two years I cultivated an onion crop. The trees grew finely, but owing to extra cultivation, as would be expected in the hoeing and care of an onion crop, the trees grew too fast, and too late in the Fall, going into the Winter with unripened wood.

TREES KILLED.

They were all killed back. The location was a north slope of timber land. In the following Spring these trees threw out new shoots, and I kept them nicely trimmed, but under the cultivation I gave they grew too fast again and were damaged.

SEEDING TO TIMOTHY

I then seeded to timothy grass. This checked the growth of all the trees in the sod. One row of these trees, however, I continued to cultivate in garden. The following year the trees fruited, those in sod breaking down with the weight of fruit, which was small, and of inferior quality. The row under cultivation, owing to the mild Winter preceding, came through in fair condition. The trees were not so full of fruit, but were of superior quality and flavor, and twice as large. This one crop was all the fruit I got from this orchard worth mentioning. The trees now became diseased. Borers began to work, the gum exuded, and the fruit after this proved inferior, and the trees died. In the succeeding years until 1870, I had a few

scattering trees set along the fences, and these bore fruit occasionally.

I observed that when the trees did bear, the fruit brought twice as much money as the fruit from the same number of apple trees did; therefore I came to the conclusion that more money would be derived from a peach orchard, with less labor, than from any other kind of fruit. This fact determined me to turn my attention to raising peaches.

PLANTING.

In the Fall of 1870, I saved a lot of pits, and planted them in November of the same year. I prepared the bed by throwing up the soil with a spade, six or eight inches deep. Leveled the bed down smooth, sowed in the pits and "spanked" them down level with the earth. I covered with boards, and filled the crevices with earth. The process was now complete. My object in covering in this way is obvious, as the boards could be raised carefully in early Spring to ascertain the length of the germ, so as to remove them to the nursery row at the proper time. The sprouts were not allowed to get more than an inch long before setting. The distance apart in the row was not less than twelve inches, so as to allow room for digging. The rows were not less than three feet apart.

NURSERY STOCK.

My nursery stock grew finely under the thorough cultivation I gave it with hoe and cultivator. Some attained the hight of five feet the first year. In the month of April, 1872, I set an orchard of eight hundred trees, the ground having been previously prepared and laid off for corn, in rows three feet and ten inches each way. I then set in every fourth check, making the rows fifteen feet four inches wide. I cultivated in corn for two years. The trees made rapid growth, but in 1874, the cold Winter killed them back the prior year's growth. In 1875, they threw out new shoots and filled nicely with fruit buds. In 1876, I procured four hundred bushels of very fair fruit from the eight hundred trees set as above stated.

I sold most of this crop in Davenport, Iowa, at two dollars, and two dollars and fifty cents per bushel, clearing about eight hundred dollars on the crop. In 1874, I took the remaining trees from the nursery and put out four hundred, matching them with the rows of the first orchard. In 1878, I had half a crop from twelve hundred trees, which I sold for five hundred dollars, clearing about four hundred dollars. I have, in eight years from planting the pits, cleared twelve hundred dollars. Who can equal this showing with an apple orchard? We import annually thousands of dollars worth of this fruit from Michigan and the Southern States.

It certainly pays better with a crop once in three years, than any apple orchard that can be grown.

I will add that I now have two thousand peach trees set. Eight hundred of them are three years old. The older trees are in sod. Last year, 1879, I had the promise of a fair crop, but the curculio stung them, and nearly all fell when a quarter grown. I succeeded in marketing twenty-six baskets of six quarts at sixty cents. My trees all went into Winter in splendid condition, and at this time, February, 1880, I have the promise of an immense crop the present year.

SECRET OF SUCCESS.

The secret of my success lies in my peculiar method of growing, which is, first, to set deep to protect the roots from frost; second, to cut out the center stalk so as to leave from three to eight bodies to each tree; third, to plow to the tree so as to cover the forks six or eight inches under ground, which prevents the borer from getting in the forks; fourth, I divide the bark among six or eight bodies, which keeps it too thin for the borers to work under, as it is known that they never attack a young tree; fifth, I never trim the peach tree except to remove a dead limb, as much trimming forces growth, and kills back. Where trees are grown in this way they seldom get more than eight or ten feet high, which is a convenience in picking the fruit. Such trees, too, furnish better protection for each other and from wind, and have open heads to let in the sun.

My variety of fruit has a beautiful red cheek. They are all freestone, and sell readily in market. I have now some fifty early and late Crawfords, three years old, with numerous fruit buds. I am well satisfied with my experiment.

ONIONS.

Among the various crops grown in this part of the State, onion raising has become one of the leading pursuits. At this writing, Feb. 15, 1880, farmers are anxiously looking to the probable vitality or defectiveness of their seed for the coming crop. Having grown the crop for twenty-nine years, and from two to ten acres annually, I may be classed with the onion growers. Many persons have engaged in the pursuit from time to time, who have not been successful, but this has been mainly from inexperience, sowing on land not suited for such crops, and lack of knowledge in preparing the land for sowing and cultivating the same.

SOIL.

I am located on land which was once covered with timber and hazel, and the soil seems to be well adapted to onion growing. I have known eight hundred bushels to be grown on an acre of the land, which at an average price of fifty cents per bushel would bring a better return than any other crop. The Mississippi bottoms are well adapted to the growth of this crop. Some growers claim to have grown one thousand and one thousand two hundred bushels per acre on this fertile soil, of which sand seems to be an important factor. As for many other root crops, the soil can not be too rich. The richer the land, the earlier the crop will mature, the less rot, and the better prices. I have used the same land successively in one instance for twenty years.

PREPARATION.

The land should be plowed, if possible in the Fall, from eight to ten inches deep. The action of the frost on the plowed land is important, as well as the packing process of Winter, Spring

plowing being generally too loose, and sometimes too lumpy; upland generally requires a coat of manure biennially, and care should be used in selecting that which is most free from weed and grass seeds.

SOWING.

I make it a point to sow the crop about the first of April, or at the earliest opportunity in Spring, between March and the first of May. I have sown on the twenty-third of February, with good results. The ground should in all cases be in good order before sowing. The common way is to level the land with a clod crusher, then sow in drills twelve inches apart and one inch deep, with an ordinary drill made for the purpose.

CULTIVATION.

Cultivation should commence as soon as the young plants straighten up, as they always come up double. If the crop can be kept clean through the month of June, it is considered secure. The wheel hoe is much used in its culture, and the straddle row cultivator, which cuts all the ground except an inch that the plants stand on. My son, who is an expert, cultivated five acres, and kept them perfectly clean with hiring only two and one-half days' labor, together with two acres of potatoes. I usually gather when one-half to two-thirds of the tops have fallen, by throwing six rows together, pulling the two center rows first. This is a convenience in stripping (as we term it), which is generally done with a sharp knife. When the bulbs are to remain on the field any length of time, the piles should never contain more than ten bushels, to prevent heating. I usually haul fifty bushels at a load, marketing them at Davenport, where a ready market is always found at some price. The onions are mostly shipped to St. Louis and towns along the Mississippi river, smaller lots sometimes being shipped to Leavenworth, Kan., and occasionally to Philadelphia and other points east. I have known the crop to be sold at five cents per bushel, the first year of the war, and

since then as high as two dollars per bushel. Last year I sold at an average of seventy-five cents per bushel, or two hundred and twenty-five dollars per acre, the average number of bushels being three hundred per acre, which is an ordinary yield. The Early Red seems to take the lead of the several varieties grown here.

W. J. EMERSON,

VEGA, JEFFERSON COUNTY.

Drainage — Fertilizers — Plowing — Rotation of Crops — Mixing Seeds — Meadows — Shelter.

My farm, situated in the southeastern part of the State, is composed of one hundred and nineteen acres of prairie in cultivation, divided into fields of convenient size. My principal object in cultivating land is to produce the greatest amount of grain, or grass, possible from any given area. To this end there are three things that not only require, but demand careful attention, viz.: Drainage, fertilizing, and proper plowing.

DRAINAGE

I consider as of the first importance, for without it much of the land in this and adjoining counties would be comparatively worthless. In speaking of draining ground we do not necessarily mean the laying of tile drains, which, however, I think the proper method of draining fields, as well as cellars. But owing to the lateness of introducing tile, and the attendant cost of laying it successfully, few have gone into the enterprise. Those who have, claim that the products of their fields have been increased one hundred per cent. in ordinary seasons by it; in very wet seasons they are able to produce fair crops, when without the drain the yield was nothing. The ordinary method of draining ground with the plow, or those fields which are quite level, with both plow and scraper, is of so much importance that it can not be neglected with impunity.

FERTILIZERS.

Applying fertilizing elements to the soil is a matter under-

valued by many, the clean-up of barn and stock yards, if taken to the field at all, being in such condition as to be comparatively worthless, the sole object appearing to be to rid themselves of accumulated heaps of filth. The better plan, and one I have adopted, is to clean the yards in the Spring, or early Summer, by throwing the accumulation into as large heaps as convenient without loading and hauling. By Fall these heaps are so decomposed that when properly applied to the soil and plowed under, the manure is of much greater value than it could otherwise have been. In applying fertilizers to meadow land, the best time I have ever found is during the Winter, or when the ground is frozen, if it can be done; it then gets the Spring rains, and is well dissolved by the time the young grass starts up, which is not smothered or choked out.

PLOWING.

The matter of plowing land, cultivating crops, and the direction in which the furrows are left open, both as a means of open drains, and to prevent the unnecessary washing away of soil, is too often neglected. The best method for ascertaining the course in which plowing should be done and the furrows kept open on level land, is to go over the field soon after a heavy fall of rain and note the direction in which the water naturally flows, and be governed accordingly. Plowing land and cultivating crops deeply should be the rule and not the exception. The subsoil plow may be profitably used every two or three years, both as a drain in wet and a preventive against crops suffering in very dry seasons.

ROTATION OF CROPS.

I also give particular attention to the rotation of crops, never cultivating or growing the same variety of grain on ground for more than two consecutive years.

MIXING SEEDS.

Another method of increasing the yield of crops is by mixing seeds, viz.: In corn, we mix red, yellow and white, of both early and late, in equal quantities; in wheat, the different

varieties that ripen near the same time, and the same with oats. I have never failed getting from ten to twenty-five per cent. greater yield than with any single variety. I always cultivate as great a variety of the cereals as possible. This appears to be necessary in a climate where one extreme of weather follows another in such rapid succession, for if one crop should fail another may be productive.

MEADOWS.

In the management of meadows, it has been my practice to seed the ground with pure timothy, and harvest at the proper time to save the seed. If care be taken, the hay is not materially injured for feeding stock. At the end of three or four years, I resow the meadow with red clover, for the purpose of loosening the soil, and the effect, like that of mixing different varieties of grain, is that the yield is increased from ten to twenty-five per cent. on meadows that have been in grass that length of time. In changing such fields from grass, we find that these old meadows make excellent pastures, and fields having been used for pasture are always well adapted to the cultivation of any crop requiring strong land. It is perhaps unnecessary to say that oats should not be cultivated on such land for a number of years, for the reason they will grow too tall and rank, and will generally lodge while green and heavy, and the effect will be that the yield will be very poor if any. I might, however, say here that pasture land Summer fallowed is the best Winter wheat ground I have. I keep horses, cattle, sheep, and hogs, in sufficient numbers to take up what I term the rough feed, that is, hay, straw, fodder, etc., and herein I make and save a large per cent. on the farm.

SHELTER.

But the way I save the greatest per cent., after economizing my expenses, is by providing shelter for all my stock, not only for horses, colts, and milch cows, but for all my stock, sheep and hogs included. In speaking of shelter for stock, I do not necessarily mean a large fine barn with all the con-

veniences that ingenuity can devise (against which I would not, however, discriminate), but I would, by selecting suitable ground make sheds and stabling of common, rough, and cheap lumber, that will protect my stock from the storms and wind of this prairie country in Winter, and the heat of the Summer sun, at a cost that will be amply repaid every year. This principle is not restricted to the few, but applicable alike to all, from the man who keeps a cow and pig, to him who counts his flocks and herds by the hundreds.

CATTLE.

I have but little experience in fattening cattle, but if my experience is worth anything, it teaches me that the proper method of fattening cattle is to stable them, give the best of feed (they will take on flesh all the faster), and allow them to go out during the warm part of the day. What I regard as true of cattle is also true of any other kind of stock I wish to feed to the best advantage.

F. T. PILKINGTON,

ELKPORT, CLAYTON COUNTY.

Rotation of Crops and Thorough Manuring Produce Good Results—It Pays to Clean Wheat.

My farm consists of one hundred and twenty acres, seventy-five of which are under cultivation. The remainder is a pasture. A farm of this size pays best, managed under a system of mixed husbandry. The pasture and woodland contain forty-five acres, and I have divided the remainder into three fields, each of which have water.

ROTATION.

I aim to have only one kind of grain in a field, so that as soon as a crop is harvested I can at once turn my stock into it. Every year I raise about twenty-five acres of wheat, twenty

acres of corn, twenty acres of grass, besides a few acres of potatoes, cane and turnips.

I always try to sow my crops so that the same kind of grain will not be in the same field two years in succession. I also seed down and break up grass land every year.

FERTILIZING.

By this system of rotation, and at the same time hauling out all my manure, I keep up the productive qualities of the farm, and seldom fail in having good crops. I always make all the manure I can, and haul it out too. This, I think, is a very important part of the regular work of a farm.

TOOLS.

I use the very best tools I can buy. My plows are strong, durable, and of the most improved patterns. They are light, run easy, and wear well, which I consider the most essential points. I use the common square harrow. It does good work and answers the purpose very well.

I use a combined reaper and mower. It works well, is a first-class mower, and a very good reaper.

CLEANING WHEAT.

I always sell my wheat, and take great care in cleaning it well before shipping it. I find that I am able to get from five to ten cents per bushel more for wheat that is cleaned, than for that sold in the condition it comes from the threshing machine.

With average crops and fair wages, it costs me seventy-five cents per bushel to raise wheat. All that I receive in excess of this is clear profit.

COST AND CULTIVATION OF CORN.

My corn and oats I convert mostly into pork and beef. The average cost of raising corn with me has been about eighteen cents per bushel. I always plow corn four times and hoe it once. Some farmers do not believe in hoeing corn, but I do. It pays me every time. My oats cost me about fifteen cents per bushel. My pork about two and one-half cents per pound,

and my beef about the same. Of course these estimates vary somewhat in different seasons, but averaging one year with another, I think they are about correct.

CATTLE.

The best breed for beef or milk on small farms, I think, is the common stock. These, if properly taken care of, are equally as good for beef and milk as the fancy breeds. As farmers can not compete with creameries, I do not deem it advisable for them to keep more cows than will supply the family with milk and butter.

HOGS.

The Poland China is my favorite breed of hogs, as they are easily kept, quick growers, and come to maturity early. I have a warm place for them to sleep, and a roomy pen, with a plank floor on which to feed. The pens are kept clean, and in comfortable condition. I would never feed hogs in the mud, as some do; a few planks on which to feed will save one-half the corn. I find that clean, dry pens, with plenty of wholesome food, given at proper intervals, never fail to produce good hogs. My experience is, that dry corn is better for fattening hogs than ground or cooked feed, which is recommended by some. For young pigs the latter will do very well, but for fattening I would never use anything but dry corn.

HORSES.

The best breed of horses, according to my experience, for general farm work is the best of the common stock. These animals, if well raised and taken care of, are not clumsy, awkward and slow, like some of the large breeds, but are spry, active, strong, durable, easily kept, good travelers and workers, and make very serviceable teams. With very little training and trimming they make beautiful carriage horses.

FRUIT.

This is not a very good fruit region, and only the hardiest kinds of common fruits can be raised, therefore it does not pay to grow for market. I have an orchard large enough to supply

my family, and do not think it advisable to raise more than this. When the seasons are favorable, I have all the apples, grapes, gooseberries, currants and other small fruits I need. I do not give them any extra care. I simply keep them clean and trimmed, so that they will bear as well as possible, and let them go at that.

POULTRY.

I do not raise turkeys, geese, and ducks, as I deem them unprofitable, except for home use. I keep enough chickens to consume the screenings and grain that get scattered about the barn, granary, etc. In Summer I do not pay much attention to them, except to the young chickens. These I keep in coops, and feed until they are large enough to take care of themselves. In Winter I have a warm place for them to go into, and I feed them when the weather is bad. I have at present a cross between the dark Brahma and the common fowl, which I think is good, for they are very good layers, are of medium size, and excellent for the table.

MISCELLANEOUS.

My buildings are not large, commodious, or of the most approved pattern, but I am making them so as fast as I can. I have buildings and sheds for every thing, and always make it a point to have all implements cleaned and housed as soon as I am through using them. I always have a year's wood ahead seasoning, and fill my woodhouse with dry wood every Fall before cold weather begins. I have good wells of water near both house and barn, easy of access, and so arranged that I can water every thing easily and rapidly. My farm is not of the very best, or in the most desirable position, but I can make a good comfortable living from it, and from two to four hundred dollars a year besides. Some say that farming does not pay. I have to my own satisfaction proved it otherwise, and believe every farm can be made to pay a reasonable profit with proper care and attention.

LAND.

The land in this region is partly prairie and partly timber.

The timber land requires a large amount of labor to prepare it for the plow. The land is rolling, and consists of a clay soil, interspersed with sandy spots. It soon dries off after heavy rains, and is easily worked. When properly cared for and tilled, it is very productive, and a general failure of any kind of crop is never known. I am never troubled with any kind of insects, except chinch bugs, and with these only occasionally.

THE CLIMATE

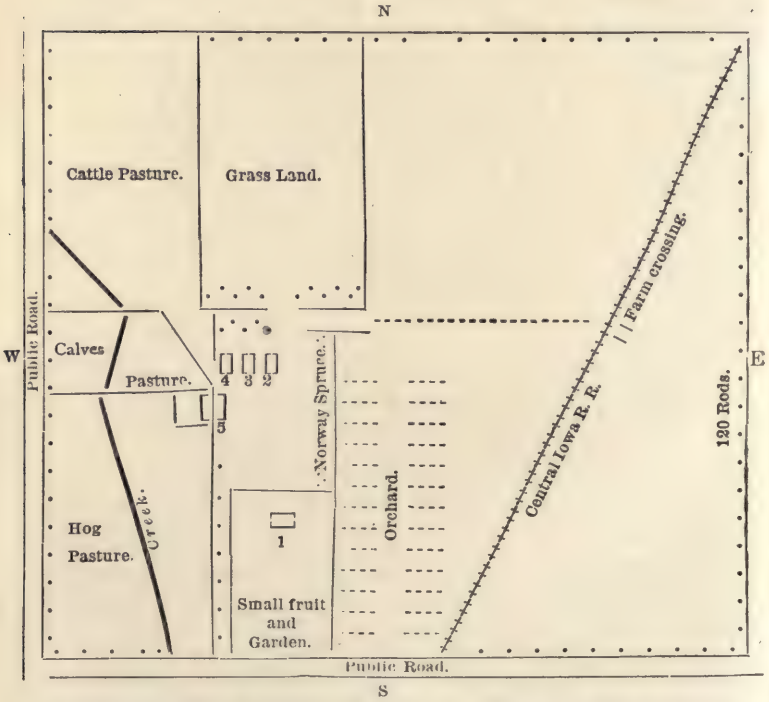
is all that could be desired. The Summer is eight to nine months long, and the Winter three to four months. We do not generally get a very large amount of snow in Winter. Severe storms and hurricanes are unknown, and we very seldom have floods that do any damage worth noticing. We have an abundance of good springs, and water can be had by digging from ten to sixty feet. The small streams furnish good water power for mills, which are plenty, and an abundance of fresh fish for general use.

S. A. FRENCH,

FAULKNER, FRANKLIN COUNTY.

Management of Hogs — Corn Husks Valuable — Artichokes — Self-Feeding and Watering Fixtures for Stock.

PLAN OF FARM.



1, house; 2, barn; 3, granary; 4, shop; 5, corn crib and hog pens. The dots represent trees.

GENERAL MANAGEMENT.

My farm is small, and contains but 120 acres. I keep eight cows, a few head of young cattle, a few sheep, two spans of

work horses, and generally raise from fifty to one hundred and twenty-five hogs. I send off the young cattle of the herd every Summer. I have a pasture for my cows, one for the calves, and one for the hogs. Each pasture has running water, and the pastures are mostly in blue grass; but some are in timothy and white clover. My grass land that I cut for hay is red clover and timothy, mixed.

HOGS.

I raise but little small grain. My plowed land is mostly planted to corn, of which I have often to buy to keep my hogs till the grass has a good start. I feed but little corn after grass comes, until I commence feeding in the Fall. I do not believe in letting the hogs run until the grass is up nicely in the Spring. I have a field of red Brazilian artichokes on which I feed my hogs in the Fall and Spring, with excellent results. I plant a few acres of sweet corn every year for the hogs. I commence to cut and feed stalks and corn as soon as the latter gets into the milk. It gives the hogs a good start, and they are in fine condition to fatten with the other corn when it is hard and gets dry enough to shell.

SELF-FEEDER.

I then use a self-feeder for the hogs. This feeder is a long box that will hold three or four loads of corn, and it has an opening its whole length at the bottom. The opening is so large that the hogs can work out the ears of corn, and can feed whenever they feel inclined. I have the box on a floor to prevent the hogs from scattering the corn in the mud, when the ground is muddy. I think it poor farming to feed hogs in the dirt. After the corn gets dry enough I shell all my corn and grind it with my feed mill. This mill stands in one corner of the corn crib.

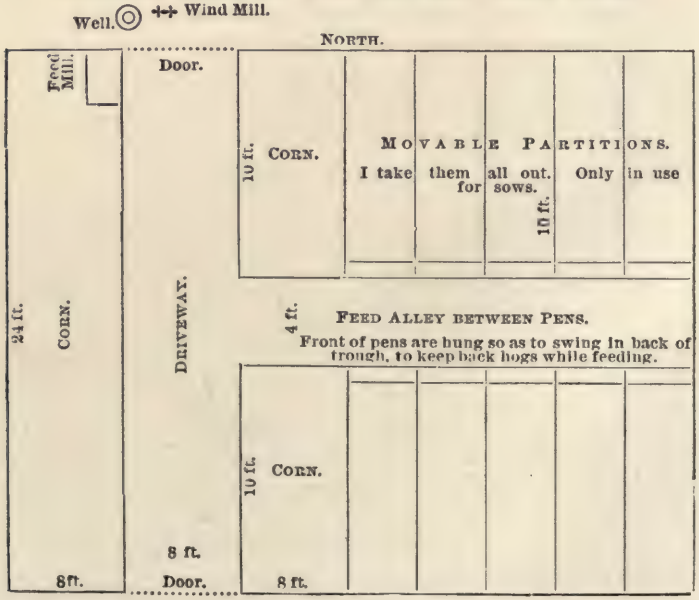
HOG PENS.

The hog pens are joined to the corn crib. The feed alley passes through one of the cribs into the driveway between the cribs. I use movable panels for the partitions to the breeding pen, and remove them when the pen is not in use.

CORN CRIBS.

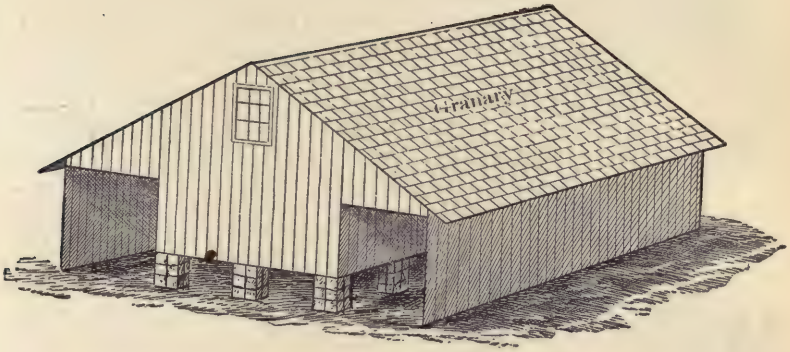
My corn cribs are made tight on the outside, so that no snow or rain can enter. They are raised two feet from the ground. The bottom of the cribs are made of fence boards, laid one inch apart, so that the air has free circulation through the corn. I nail the boards as far apart as I can and have them still keep the corn from running through. My cribs are twenty-four feet long, eight feet wide, measuring inside, and ten feet high at the lowest side. Some farmers assert that corn will spoil in such cribs, but I find that it keeps better in a crib made in this manner than it does in open cribs. In good weather we leave the doors of the driveway open while we are husking, but in stormy weather the doors are closed. This prevents the corn getting damp.

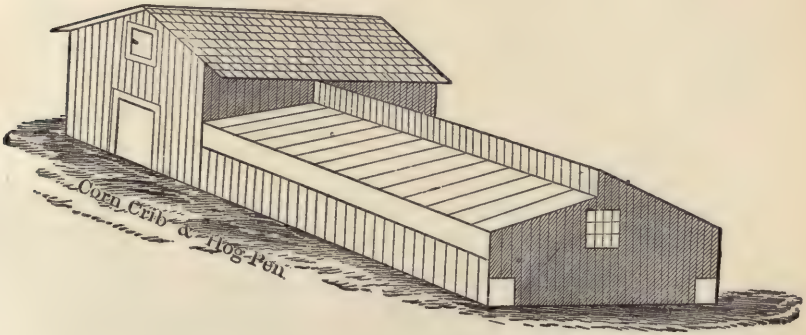
GROUND PLAN OF HOG PEN AND CORN CRIB.



CORN HUSKS

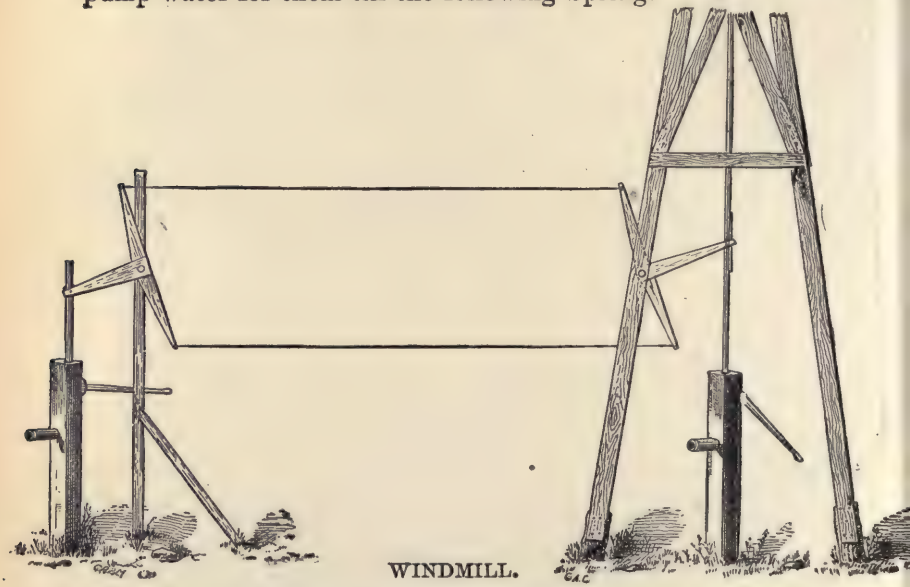
make a splendid bed for hogs, and I snap sufficient corn to furnish them with bedding through the Winter. I store it in a





The roof on south side of hog pen drops fifteen inches lower than north side. Boards are hung on hinges so they can be raised to let the sun into the north pens over the south roof, and under eaves of south roof to let sun in south pens.

crib where it will keep dry, and give the hogs a few baskets of corn in the husk whenever their bed needs renewing. The cobs will do no harm. Husks do not break up as straw, and remain dry very much longer. My hogs are a cross of the Poland China with the Berkshire. My cattle and hogs go to the creek to drink until it freezes. Then I use a windmill to pump water for them till the following Spring.

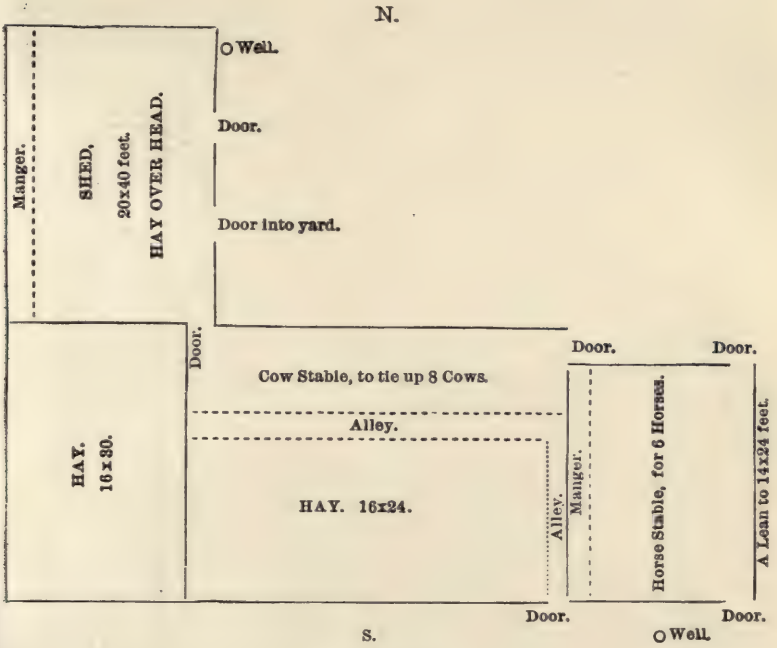


WINDMILL.

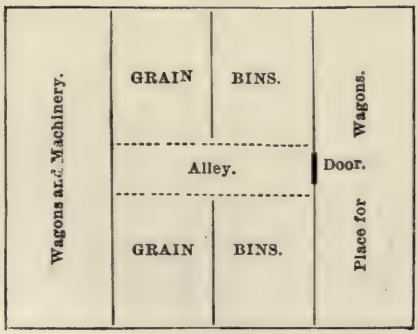
I pump water for the cattle from a well that is sunk several rods from the mill. I use fence wire from the windmill to the pump, in the manner designated by the sketch. As the pump pole works up and down to the mill, it works a T at the mill attached to wires. There is a similar T at the other pump, and both are worked together.

BARN.

My barn has no driveway made for wagon. I put my hay in through windows large enough for using the hay-fork. I tie the cows in stanchions three feet from the center. The floor slants back a little, and a slope of two inches is given behind the cows, so that their floor is kept dry.


N.
Well.
Door.
Door into yard.
Manger.
SHED,
20x40 feet.
HAY OVER HEAD.
Door.
Door.
Door.
Cow Stable, to tie up 8 Cows.
Alley.
HAY.
16x30.
HAY. 16x24.
Alley.
Manger.
Horse Stable, for 6 Horses.
A Lean to 14x24 feet.
Door.
Door.
S.
Well.

GRANARY.


N.
Wagons and Machinery.
GRAIN
BINS.
Alley.
Door.
GRAIN
BINS.
Wagons.
Place for

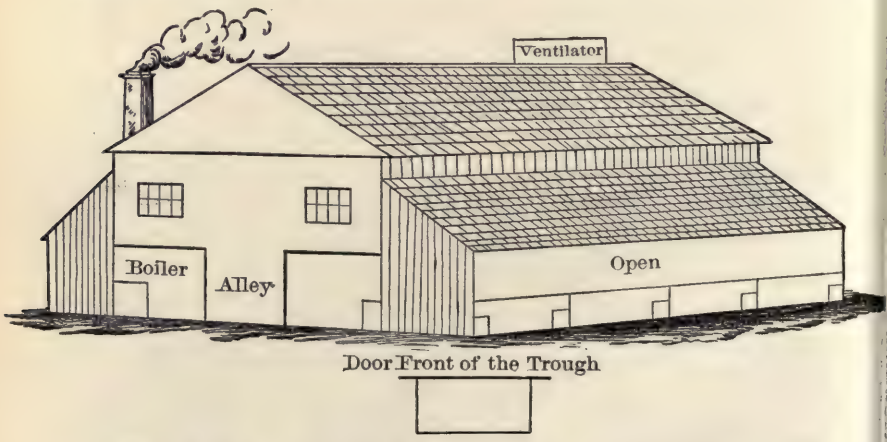
My buildings are well sheltered from wind, by artificial groves of cottonwood and soft maple, with a few rows of birch, larch, and Norway spruce. I have four acres of grass. I have a young orchard of four hundred and fifty apple trees which are just coming into bearing.

W. H. COLBURN,

WATERLOO, BLACKHAWK COUNTY.

Plan of a Hog Barn, at Lester, Blackhawk County.

I consider this hog barn as near perfection as possible. A boiler occupies one corner, having a water tank and steamer, in which to cook feed, set in an arch.



The tank is connected by a pipe to a windmill pump, so that water can be run into the tank, boiler, or troughs, at will. The troughs run the whole length of the pens, on each side of the alley. The pens are double, and the front part or section is used for feeding, and the rear opens into the yard for the removal of the offal, which is easily cleaned out by throwing it through the small door below the space marked "Open." The door front of the trough is hung by a round tenon at

each end, and is made fast by a pin. It can be swung back over the trough, crowding the hogs back, so they can not get into the trough when being fed. The hogs lie in the outer pens much of the time and only come into the feeding part to be fed, so that that section is kept clean at all times. The pens are connected with doors; thus the hogs can be removed from one section to another, readily. At one end of the building is a shute for loading hogs into wagons when carried to market. The whole is covered with dressed stuff, painted, and has a good shingled roof.

JOHN WINTER,

WESTCHESTER, WASHINGTON COUNTY.

Stone Quarry — Osage — Stone Barn — Maples for Wind-Breaks — Corn — Grass — Stock and Drainage.

My farm is situated in Washington county, about ten miles northwest of Washington, the county town, and four miles north of Westchester, a station on the Sigourney branch of the Chicago & Rock Island and Missouri River railroad. It contains eight hundred acres, of which seven hundred and thirty acres are prairie, and the remainder timber, situated two and a half miles from the prairie. This timber is a beautiful undergrowth of oak and hickory. I have also a very valuable stone quarry situated in my timber.

My prairie land is of the richest quality of Iowa loam, and is well adapted to grain or grass. One hundred and fifty acres are of the finest quality of meadow land; the remainder are superior for grain or pasture — probably as good soil as eastern Iowa affords. The farm is bounded by a public road on the north and east, and is divided in the center by a road running north and south from Wellman Station to Westchester.

The land lying west of the road is just three-fourths of a mile square. That portion on the east side is one mile long

and one-half a mile wide, except eighty acres, which extends a quarter of a mile farther east. A very beautiful brook runs through the eastern end of the farm, furnishing an abundance of pure spring water for my stock, Winter and Summer, as it never dries up or freezes.

BUILDINGS.

My buildings are situated in the center of the farm, on the road running north and south. My house was built in 1866, at a cost of nine thousand dollars, after the gothic style, with thirteen rooms conveniently arranged, and with every convenience calculated to make home comfortable. It is situated on an eminence, with a large and commodious yard filled with varieties of evergreens of large growth, as also a variety of other shrubs and plants of magnificent proportions. I have a goodly supply of fruit, such as apples, pears, plums, grapes, cherries, currants, and strawberries. Last but not least, the farm has about ten miles of well grown Osage fence, capable of turning all kinds of stock.

A STONE BARN.

My barn is situated on the east side of the road, opposite the house. It is forty by fifty feet, and built of the best stone. Connected therewith are granaries and corn cribs sufficient to store several thousand bushels of grain. Near my horse, cattle, and grain barn, I have a hog barn, thirty-two by thirty-two feet. The first story is of stone, with corn cribs above. This barn I provided especially for my brood sows when they have young, and it has proved just the thing for sows and pigs. By means of this barn I can save about all the pigs dropped at any season of the year. My buildings, yards, and orchard, are all surrounded by a maple grove, sixty feet high, about eighty rods long on the west, eighty rods on the north, and eighty rods on the east, forming almost a hollow square.

CORN AND GRASS.

I am engaged in raising corn and grass. It costs me about eight cents per bushel to cultivate and harvest my corn. I

convert it nearly all into beef and pork, realizing from twenty to sixty cents per bushel. My experience in grass is that the older the sward the better for grazing. Blue grass and white clover are my choicest varieties of grass for grazing purposes. Timothy and red clover prove the best varieties for meadow. I harrow in early Spring, and top dress with manure. This is what meadows need in this section of Iowa.

STOCK.

I have found that the best breeds of cattle for beef are Short-Horns. The best breed of hogs, in my judgment, is the Poland China, which I grow quite extensively. I like to have my pigs come in April and May, and the January following I market them, when they weigh from two hundred and forty to three hundred pounds. I do not Winter any but brood sows.

HORSES.

As to horses for all purposes, I am in favor of the Mambrinos. I think, with reference to rearing, that most of our colts in the West get too much grain. I have for the past several Winters allowed my colts to run on pasture, giving them but little feed. I find that they grow and develop better than when they are kept on higher feed, and in the end make hardier horses and have much greater endurance. I approve of early breaking. By the time they are three years old, I want my colts well accustomed to the harness, but do not work those intended for farming and draught purposes too long to a light buggy before teaching them to draw a load.

MOLE AND TILE DRAINAGE.

My experience in drainage, especially in underdraining, is that farmers can not place too high an estimate on that kind of work. I have now about three thousand rods of mole drainage on my farm, and find from practical demonstration that no money invested on the farm pays better. But I recommend by all means tile drainage, it being much more durable and not liable to obstruction.

MINNESOTA.

E. T. WAY,

CLAREMONT, DODGE COUNTY.

The Soil Well Adapted to Mixed Husbandry — Spring Wheat — Fall Plowing a Necessity — Stock — Pasture and Meadows — Clover.

My farm is situated on the head waters of the Azumbro river, three miles from one of the flourishing villages on the Winona and St. Peter railroad. A fine stream of never-failing water crosses it from west to east. Bordering this creek, and on either side of it, are the finest natural grass meadows to be found in the county, while the upland, although perfectly dry and friable, is but a few feet above the level of the meadows, making the farm remarkably even and easy to work, there being no up-hill draughts or side-hill inconveniences to hinder operations. It embraces one hundred and sixty acres, one hundred and ten of which are good, dry, easily-cultivated plow land, and forty to fifty acres beautiful grass meadow.

The land was originally covered with burr oak, and several of the ancient trees are yet to be seen on different parts of the farm. The soil is composed of black, sandy loam, thirty inches deep, sufficiently light and open to never bake; while under the black soil, for two feet deep, is yellowish earth, compact and hard, but without the sticky, impervious character of clay. Below this latter is coarse sand and gravel to an unknown depth. Twelve feet below the surface is water. As may be seen from the foregoing description, the farm is well adapted to mixed husbandry, or grain growing combined with the raising of stock. The latter plan is the one I have adopted.

WHEAT.

In preparing land for Spring wheat, I make it a point to do all the plowing possible before the frost has killed the grass and weeds, as the best results are obtained by turning these under green. I thus secure, to a certain extent, the benefits of a green manure, while another advantage is realized, viz.: The weed seeds sprout earlier, and the growth is subsequently killed by frost.

FALL PLOWING

for Spring wheat is a necessity; for the latter requires a fine tilth and a compact bed. The first of these is secured by the action of the frost and sun upon the bare, upturned soil, while the second is produced by the packing tendency of the storms and snows of Winter.

If small grain must be sown on Spring plowing, I prefer to sow oats rather than wheat.

I do but little with corn, as a market product, and raise only about what is needed to feed on the farm.

POTATOES.

I have had success for five years in growing potatoes. I select the newest land available, and seed light, cutting my seed so that there shall be not more than two eyes on a piece. I then plow a light furrow with a large single-shovel corn plow, and drop one piece in a place, about eighteen inches apart. As soon as the potatoes begin to show above the ground, they are hoed, and when about twelve inches high they are hilled up.

MELONS.

I have had remarkable success with vines, such as melons, squash, and cucumbers, and I get it in this way: I open a hole, where each hill is to be, large enough to hold two shovelfuls of manure. I fill this with good manure, leveling off and covering with one inch of dirt. On this I plant the seed, taking care to put in enough seed in each hill to make allowance for loss by bugs and worms. When the plants are well out of the ground, I go over them all, stirring up the ground

and passing my fingers among the plants, loosening the dirt around each stem, removing the crust if any has formed, and replacing with fresh, moist earth. This will disturb the striped bug and give the vines a good start. Frequent hoeing afterward is all that is required.

CABBAGE.

In raising cabbages I have found that in addition to the frequent stirring of the ground, it is an excellent plan to occasionally sprinkle a pinch of salt over each head. It will keep the cabbage worm from doing damage, and add much to the number and quality of the heads produced.

STOCK.

In raising stock, of course, one of the chief considerations is the growing of grass, both for pasture and hay. In this northern climate where the Winters are so long and severe, the latter is especially important. I have unusual facilities for cutting wild hay, which for wintering stock I consider in some respects even superior to tame. If cut early and well cured it is clean, free from dust, sweet and nutritious. And I believe that cattle and horses (the latter particularly) kept upon the wild hay, are more healthy and less liable to disease than those wintered on timothy and clover.

MEADOWS.

I was told by Western men, when I first commenced cutting my meadows, that they would soon run out, and in a few years would hardly be worth cutting. This has proved to be the case, where the old plan of cutting the sloughs the last of August or first of September, was practiced, or where the cattle were allowed to run upon and feed down the second growth. My practice has always been to commence cutting my wild grass by the fifth or sixth of July, and thus have my haying out of the way before the harvesting of grain began. Of course quite a heavy second growth will be produced before frost. This I never allow the cattle to feed upon; nor do I permit it to be burned off in the Fall. The result is that a

heavy mulch is secured for the protection of the roots of the grass, and Winter killing or freezing out never occurs. Then in the Spring, before the new grass has made much progress, the fire is made to run over the meadows and every thing burned off, leaving the ground clean and free from obstructions to the mowing machines, while the ashes act as a stimulating fertilizer to quicken the growth and keep up the yield from year to year.

PASTURE.

But for pasturing, and for hay also, on most farms, timothy is needed, or other tame grasses. I have been very successful in producing good timothy pasture on unbroken prairie sod, by sowing the seed upon the last snow in the Spring. In fact, I have never failed to get a good catch in this way. The melting of the snow, and the freezing and thawing of the ground, moisten and cover the seed, putting it in the best condition for growing.

In seeding old land with timothy, I have had success by mixing the seed with the grain in the seed box (using the broadcast seeder). It is easy to determine the amount of grass seed needed to each bushel of grain put in the seeder. By this means I am able to get the seed in more evenly than I could by hand sowing.

In a country like this, where wheat raising is the principal business, and where comparatively little manure is made, it is necessary that some method of fertilizing be adopted other than the hauling of barn-yard manure on the land.

CLOVER.

I have commenced growing clover to be plowed under as a green manure, but have not had sufficient experience to be able to give definite results. We have no clover huller in this community, but I have secured good results in growing clover by sowing the seed in the chaff after having threshed the straw by hand with an old-fashioned flail. I am not certain but the catch is more sure than by sowing the clean seed,

especially if the ground is dry. The chaff seems to hold the moisture, and the seed sprouts more readily than when sown clean.

This region is largely given to wheat growing. Hence I have done but little in the way of improving my stock by the use of blooded animals. But I realize that this matter must claim immediate attention, and must take a more prominent place in the farm management in the near future, or the land will deteriorate from constant cropping to wheat.

J. OAKES,

CLEARWATER, WRIGHT COUNTY.

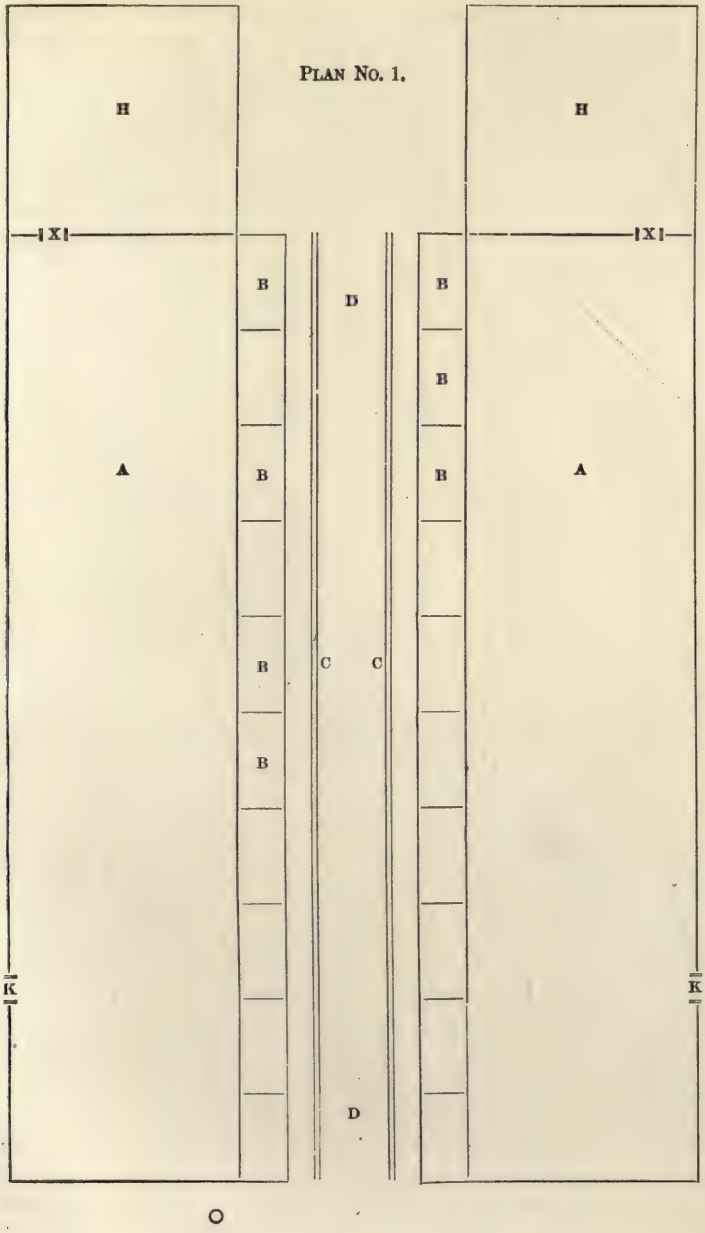
A Cheap Stable and Pig Pen.

This is my plan of cheap stable and pig pen where I stall feed cattle during the Winter and utilize pigs for working the waste and the manure.

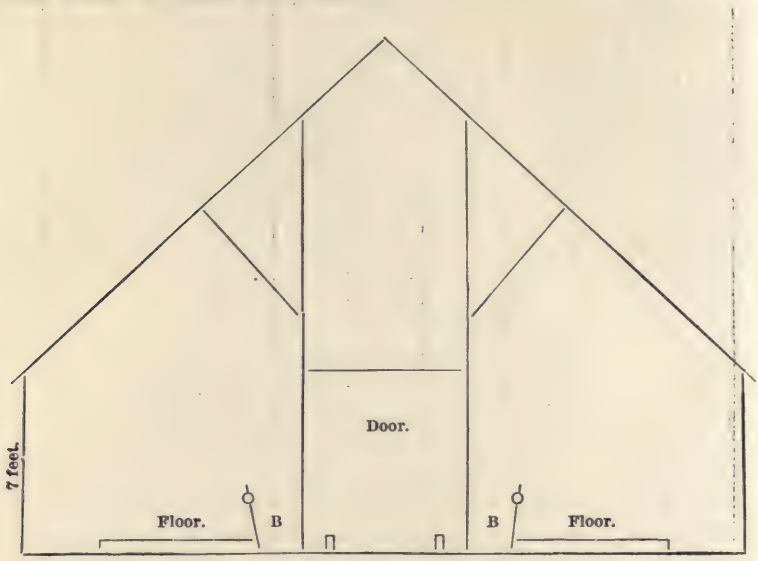
A A are the stables ten feet by forty, clear of feed boxes. B B feed boxes two feet by four. C C two by four scantling for car track extending from stable to corn stacks. D D passage for feed car. H H two pig pens, eight by ten, built with flat roofs leaning against end of stables. X X door to pig pens. K K door to stables. O pump. Water is plentifully carried through in front of the cattle by spouts.

Floor is only long enough for stock to stand on, and elevated so offal will fall away from under the hind feet, which after being worked and gleaned by the swine is thrown through slide windows in the back of stables to the wagon and hauled to the field for dressing. Some of our best and most successful feeders have built on this plan, only they stand their stock head to the outside wall of stable and feed by hand, carrying the feed on the fork and putting it through drop doors

PLAN No. 1.



into the feed boxes, leaving space to drive the wagon through the center to remove the manure.



PLAN NO. 2.—SECTION OF END.

JOHN S. HARRIS & SON,

LA CRESCENT, HOUSTON COUNTY.

A Fruit and Vegetable Farm — Commenced with Nothing and Poor Health — Now the Owners of a Beautiful Home — Greenhouse — Museum and Cabinet.

A FRUIT AND VEGETABLE FARM.

My farm consists of forty acres, the soil varying from light sandy loam to the richest black alluvial, a deep, clayey loam predominating. It includes nearly the whole of the tillable land in what is here termed a small cooley, or it is rather a side pocket or branch of a large cooley, great numbers of which are found among the bluffs bordering all the streams and rivers

in southeastern Minnesota. My place is located about two miles from the Mississippi river, and five miles northwest from La Crosse, Wisconsin, at which place I find my principal market. The farm lies to the southeast. About fifteen acres of my land may be styled level, and about equal parts of the remainder are hill sides, sloping to the southeast and northeast, making it naturally adapted for a fruit farm and garden, the high bluffs surrounding it proving protections from the north and west winds, and giving a temperature in Winter several degrees milder than in unsheltered locations. This fact makes it possible to raise a great variety of crops.

WHEN SETTLED.

I came to this State in June, 1856, a poor man, with health impaired from exposure and privations endured in the Mexican war. I purchased the place and set about improving it, with the full determination of making it a pleasant and attractive home. I had barely means to make a small payment on the land (paying twelve per cent. interest several years on two hundred and fifty dollars), purchase a cheap horse and cow, and erect a small board shanty to shelter my family, depending upon the labor of my hands for whatever more I hoped to make. I expended the larger part of the profits of my business in making improvements of a permanent character. My son and I have always felt that there was true dignity in labor, but have never lost sight of the fact that man is something more than a mere machine, that he has a mind that requires food and cultivation in order that he may look back over the years of his life and feel that he has not lived in vain.

AGRICULTURAL PURSUITS NOBLE.

Agriculture is an art and a science, the individual the artist, the science consisting in the combined experience of the most successful men of the present and past ages. To avail myself of the benefit of science, I have been a regular subscriber and constant reader of several agricultural and horticultural periodicals, and a purchaser of the best books bearing upon my business, and my library now contains over

two hundred volumes of agricultural, scientific and literary works.

THE RESULT.

Twenty-three years have passed, and I now have ample buildings for a farm of this size, viz: a frame dwelling house for a family of ten persons, with stone cellar twenty by thirty-four feet underneath; a barn, twenty by thirty feet, of two stories with stone basement of same size underneath, used as a stable for cows in Winter. I have a poultry house and pig-pen; greenhouse, fourteen by fifty feet, and a neat frame building, sixteen by twenty-four, used as a museum and cabinet, with an addition for storing hot-bed sash, tools, boxes, etc., when not in use.

WATERING FACILITIES.

I have wells and cisterns providing an ample supply of water. I have at present ten or twelve acres planted to fruit trees, chiefly apple; two and a half acres in grape vines, one acre in full bearing, and one-half of the remainder to be in bearing next season; one acre of raspberries, three-fourths of them Black Caps; one acre of strawberries; one-half acre of currants; same of asparagus; and about fifteen acres devoted to the growing of vegetables for market, and corn and roots for stock. About one acre is occupied with buildings and yards, and about seven acres still remain unimproved, being well timbered with a young growth of oak, the thinnings of which I use for fuel, grape stakes and bean poles.

STOCK.

I keep one span of horses, four cows, four hogs, and from fifty to one hundred hens. I feed stock from forage produced upon my place, adding about five tons of hay, and a few tons of bran and shorts. This amount of stock furnishes about all the manure required to keep the land in good condition for the kind of crops I raise, and for the construction of hot beds, with the addition of about one hundred loads procured in the village a mile distant, and which I haul in the Winter. My horses I stall the whole year, and feed them during the Summer upon

grass cut upon the place, in the orchard and other patches not in cultivation. During the Autumn and early Winter I give them corn fodder and hay, also moderate feeds of grain, morning and evening.

PASTURE.

My cows are led to pasture on adjoining unimproved lands every day from about the twentieth of May to the first of September, and taken in and yarded every night, receiving morning and evening a liberal feed of bran or shorts, or of cabbage leaves, green corn fodder, or unsalable vegetables. I Winter them chiefly upon corn fodder and roots or bran, varied with hay, two or three times a week, and allow them free access to a straw stack, which is provided for clean bedding, and costs but little more than the trouble of hauling it half a mile. My cows are the best I can procure of the native breeds, and are kept in such good condition that they yield from eight to twelve pounds of butter per week, more than half of the year.

BUTTER.

The surplus which I have over what is needed in the family, I sell at the highest market price, and it more than pays for the actual expense of feed. I fatten calves for the butcher, except an occasional heifer which I raise to take the place of a cow that is getting too old for profit.

HOGS.

I usually fatten from two to four, seldom allowing them to become more than one year old. I buy young pigs in preference to raising them, but am now keeping a good breeding sow, expecting to derive some revenue from the sale of pigs. I feed upon the sour milk, waste fruit and melons, and the sweet corn that is unfit for market; thus they are no actual expense, but furnish bacon and lard for the family. I do not allow them to run at large. My favorite hog is the Berkshire.

POULTRY.

Aside from the value of their manure and the aid rendered in destroying noxious insects, which poultry affords, I derive

but little profit from this branch of our business. They are allowed a free range of the place at most seasons of the year, and frequently do some damage to the fruit and vegetable crops. I keep from fifty to eighty of the earliest hatched pullets over Winter, as such are the best Winter layers, selling the extra eggs until time for setting in the Spring. After from one to two hundred chickens are hatched out, I reduce the flock to about twenty of the best, selling the remainder. The male chicks I send to market as soon as they are fit for broiling.

THE GREENHOUSE.

I have a greenhouse for the propagation of flowers and ornamental plants for market. In past years it has paid very well, but owing to the increase of my other business I shall merely use it hereafter to keep and furnish plants and flowers for my own use, and for the starting of early tomato and other vegetable plants, propagating for sale only sufficient bedding plants to pay running expenses.

THE MUSEUM AND CABINET.

This institution is not designed as a direct source of revenue, but for my own pleasure and benefit in pursuing the study of natural science and for the entertainment of visitors and friends. It now contains a very good collection of insects, injurious and otherwise, two hundred specimens of stuffed and preserved birds, native to this State, and twenty specimens of the smaller wild animals found here. We are now engaged in making a collection of the woods and woody plants found in this State, and shall add departments of grains, grasses, minerals, etc. The money expense, aside from building and cases, has not been very great, as we are our own collectors and taxidermists.

THE ORCHARD.

This branch of my business has not been as profitable as I could have wished The field was an untried one, and I expected failures and disappointments. The soil was new and

most of the varieties of trees had their origin in climates far different from ours. I was at the mercy of unscrupulous agents, and the long time taken in transit from the distant nurseries often brought me my trees in very bad condition; but I can look back and feel that I am making progress. I procured the first dozen trees from Rochester, New York, June 14, 1857, one month too late for successful planting. Four of them are still living, and produced the first apples ever shown at a fair in the State. In the Spring of 1859, I planted fifty more apple trees, obtained from a nursery in Illinois, but three or four of which survived long enough to produce fruit. Every Spring since I have added to the extent of the orchard and replaced such as died out. I have tested more than one hundred and fifty varieties, and have at this time about forty doing reasonably well. The Winter of 1872 and 1873, was very disastrous, entirely killing one-third of the trees, root and branch, and seriously injuring another third, so that at this time my orchard is composed largely of young trees not in full bearing. The annual receipts for the past five years have been from four to six hundred dollars. My best apples average near one dollar a bushel, and Transcendent crabs forty cents per bushel. Windfalls and inferior qualities I convert into vinegar. This year I saved six barrels (three hundred gallons) of pure apple juice. For two years my crop has been lessened by late frosts. I set my trees in land previously used for growing other crops, twenty to twenty-five feet distant each way. I crop the ground between them with potatoes, melons, beans, or other early maturing crops, for two or three years. I then follow with strawberries, and then grass. I have had the best success with Duchess of Oldenburgh, Red Astrachan, St. Lawrence, Fameuse and Tallman Sweet, and the Walbridge, a late keeper; all promise well. My great hope of final success is in varieties that originate from seed here.

THE VINEYARD.

I commenced growing grapes about the year 1863, planting one acre of the leading and popular varieties, purchasing

many of them at exorbitant prices. The Winter of 1872 and 1873, wrought wholesale destruction, and I at once commenced anew, raising my own plants from cuttings, and making the Concord and Delaware the base of operations. I have the newer varieties on trial, but do not intend to expend large sums for uncertainties. I have one acre in full bearing, which produced this year seven thousand pounds (three and one-half tons), and I sold them at an average of six and one-half cents per pound. My vineyard is planted upon what I consider the poorest soil there is for any other purpose. The land slopes strongly to the south, and is sheltered from north winds by high grounds or bluffs. My method of planting a vineyard is to plow the ground very deep as early as the Spring will permit, and set two cuttings in a place, about six or eight feet apart, in rows eight feet apart. If both cuttings live, one is taken up the next Spring, and set where both have failed, or else planted in the nursery for future use, or for sale. The first and second years a crop of tomatoes or melons is taken off the ground from between the rows. After the second year the whole ground is given up to them and, for cultivation, they receive a rough digging over of the ground with a fork or pronged hoe, in the month of June, and also have a clean hoeing about the first of August. I train mostly to stakes, and prune in November, keeping the bearing wood as near the root as possible. I do but little Summer pruning or pinching back. At pruning time the vines are cut loose from the stakes, and the stakes are pulled up and laid over them, which, with the prunings, is all the protection I give the hardy varieties. I cover the tender varieties with straw, brush, corn stalks, or earth, as is most convenient. I estimate the annual cost of caring for a vineyard by these methods, at sixty dollars per acre.

RASPBERRIES.

The raising of these has been very profitable to me. The Black Caps have netted me from one to three hundred dollars per acre. From three to five years is as long as it pays to keep

them on one tract of ground, when they should be destroyed; they then leave the land in good condition for corn or potatoes.

STRAWBERRIES.

Owing to the immense quantity of this fruit sent to our market from other points, and over production at home, most growers are raising them at a loss. However, by having some reputation established, and by taking extra pains in picking and placing them in the market fresh, and in good condition, I find ready sale for them at two to five cents per quart above the ordinary prices. Therefore they prove with me a paying crop. My method of growing them is to set the plants in the Spring on clean, rich, deep-plowed land, in rows three feet apart, so as to admit of the use of a horse the first year in cultivating. The first crop I take from what I term "matted rows," after which they are allowed to cover the whole ground and receive no care but hand weeding and thinning. As soon as a bed begins to decline in productiveness or quality of fruit, I plant new beds, plowing the old ones under and putting the ground into vegetable crops.

CURRANTS.

I grow currants more to keep up the variety than for pay. The wholesale price here rarely exceeds one dollar per bushel. The labor and expense required to grow and market a superior article is greater, in proportion to value received, than any other fruit I have attempted to raise.

THE VEGETABLE GARDEN.

I will make but a brief allusion to this. I occupy about two acres with early peas, beans, and potatoes; the same ground being taxed with a second crop of tomatoes, turnips, or fodder corn, after the first is gathered. I plant from one to two acres of tomatoes, about two of cabbage and cauliflower, and about three to five acres to beets, carrots, parsnips, and onions. I also have a patch of horseradish, Lima beans, cucumbers, squashes, egg plants, peppers and celery, and raise three to

five acres of sweet corn. I also raise two acres of field corn to furnish feed for horses and chickens.

It may appear that some seasons I claim more acres of crops than I have of land under cultivation. This is accounted for by the fact that I take two crops per year from some of the ground, and a part crop from portions of the orchard. As far as possible every thing is planted so as to admit of using a horse in cultivating. Crops which require to be closer, I plant with a Planet Jr. combined drill and wheel hoe, and cultivate with the same machine and a double wheel hoe. I raise all plants required for transplanting, and have large quantities for sale, using for the purpose seventy-five to one hundred sashes on hotbeds and cold frames. My earliest tomatoes are sown in shallow boxes in the greenhouse, about the last of February, and at intervals during March. When about two inches high, they are put out into other boxes of fresh soil, one inch apart, and when four or five inches high they are transplanted into hotbeds or cold frames, according to the lateness of the season. When all danger of frost is past, I take them up with a trowel and plant them out where they are to fruit. Cabbage and cauliflower plants I start in the earliest hotbeds and afterward transplant into cold frames before planting in the open field.

Besides myself and oldest son I employ two men for seven months, and hire most of the picking of fruit done by women and children.

Looking back, I see that with more capital at the start, much more could have been accomplished. Perhaps, too, if I had spent less money for books and papers, and less time in studying them, and toiled early and late, and saved, I might have been rich in the eyes of the world, but, alas! "poor in spirit." I am satisfied. My boys have grown up and have never shown a disposition to spend their evenings and leisure time in evil company, loafing about the stores and shops of the village, and I believe the world is no worse for my having lived in it fifty-four years.

T. G. BOLTON,

PLAINVIEW, WABASHA COUNTY.

Good Wheat Country — Methods of Raising It — Stock — Sheep Yard and Hog Pen.

A FINE WHEAT COUNTRY.

My farm is situated on Greenwood Prairie, in southern Minnesota, a locality already widely known as one of the very best wheat producing regions in the State. For a long time wheat raising was found to be so profitable, bringing such quick and sure returns, that no other branch of husbandry had scarcely a trial. But with a climate that is just about right, and a soil that is unsurpassed for general farming purposes, we are gradually drifting into diversified farming.

GRAIN RAISED.

On a farm of two hundred acres, I had this year one hundred acres wheat, ten acres barley, twenty acres oats, twenty acres clover, twenty acres timothy, twenty acres corn, and the remainder in pasturage.

These crops have all yielded well with me this year, except wheat, which is of good quality but limited in quantity, owing to unfavorable weather just before harvest.

METHOD.

My plan on this farm for eight years past has been to sow at least twenty acres of grass each Spring, sowing four quarts each of timothy and clover per acre, with the wheat, by mixing the grass seeds and the wheat thoroughly together, on the granary floor. They may be sown in the ordinary broadcast seeders, just as though the wheat were handled alone. After harvest the grass will be found as evenly distributed as it could have been done in any other way.

The following year the clover predominates, so much so

that on the twentieth of June, when ready to cut, a man without experience would despair of ever seeing any timothy from the sowing. I have made from such a sowing a clear crop of young clover which I cut and put in the barn. Then I let the clover grow for seed, harvesting the crop about the time that hard frosts appear in the Fall. Now you may bid good-by to that seeding of clover, but next Spring the timothy will come out ahead, and I am sure of a ton and a half or two tons to the acre. After this crop is secured, I plow the ground again in the Fall, and it is ready for corn in the Spring, after which the small grains are sown as most convenient.

HOGS.

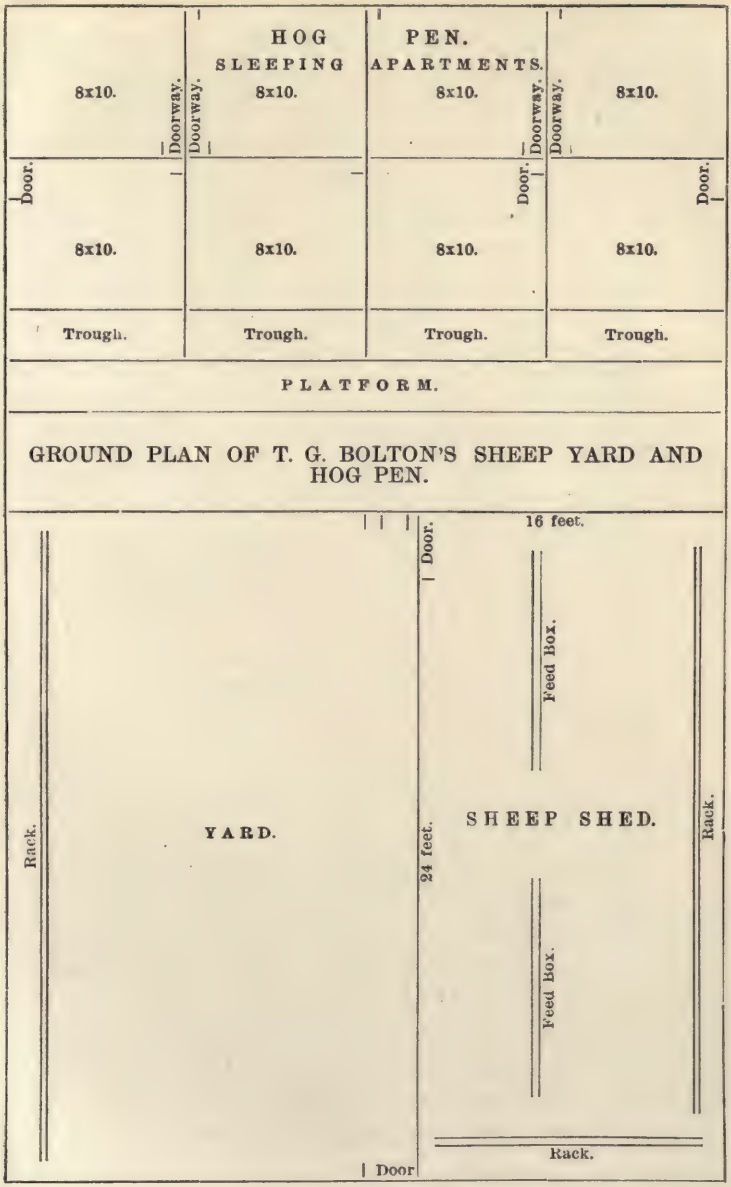
I have best success with the Berkshires, which I have bred almost exclusively for seven years. I have thought it more profitable to have pigs come rather late in Spring, or before the first of July. I give them a good start on milk, green peas, and soft corn. I Winter them in a big straw-stack, in which they will make their own shelter and bed. I do not believe it will pay to try to make them grow much during the Winter. In the Spring I give them a good run in clover, with plenty of water, and very little else until the green peas are ready. These I have growing near the pasture and commence feeding vines and all, about the time the peas become fit for the table.

When the peas are used up, green corn is ready, which I furnish them from this time on, increasing the quantity as it ripens, so as to finish fattening about the first of October. Then I watch my chances for the first market.

CATTLE.

I have not had the best of luck in raising beef cattle. I raised some good grade Durhams, but they invariably cost me more than I could sell them for for beef. I may possibly try it again some time.

I sold my Durhams and bought a few Jerseys. I have been breeding these for three years, and have found ready sale so far for surplus stock. I am well pleased with the cows for dairy use; in fact, would rather have for use on a prairie farm


HOG
SLEEPING
APARTMENTS.
PEN.
8x10.
Doorway.
Doorway.
8x10.
8x10.
Doorway.
Doorway.
8x10.
Door.
Door.
Door.
8x10.
8x10.
8x10.
8x10.
Trough.
Trough.
Trough.
Trough.
PLATFORM.
GROUND PLAN OF T. G. BOLTON'S SHEEP YARD AND HOG PEN.
16 feet.
Door.
Feed Box.
Rack.
YARD.
24 feet.
SHEEP SHED.
Rack.
Feed Box.
Rack.
Door

a little Jersey cow than the largest Short-Horn that was at the fairs this Fall. I set the milk in deep cans, and keep it in an ice chest of home manufacture, and cool it with ice from my own ice house, which I fill every Winter from the river four miles away. I use a rectangular churn, and like it.

HORSES.

I believe the most serviceable animals are mules, but have raised some nice grade Normans. They are well liked, and make good horses for the farm.

POULTRY.

I have been rather tardy about getting improved breeds, but have now some young Plymouth Rocks, and have built a new hen house and inclosed a yard to protect them from the Winter winds. I have large expectations for the future.

FARM MACHINERY.

I use a broadcast seeder, a McCormick harvester, a Buckeye mower, a Phœnix horse-rake, a hay loader and horse fork. I do not think the kinds I use are all of the best, and when I buy again I will change some of them. A farmer is entitled to the best of every thing — if he pays for it.

E. N. DARLING,

LA VERNE, ROCK COUNTY.

Discouragements — Descriptive — Planting and Harvesting — Hogs — Cattle — Horses — Poultry — Fruit.

HISTORICAL.

When I first moved into this county, in 1868, all the comforts of civilization were still one hundred miles away. We had to travel one hundred miles to mill, store, or market, to procure what we needed, and our ingenuity was taxed to the utmost to devise comfortable protection for man and beast.

Dwelling houses were made from the sods turned up in breaking the land; barns also were composed of the same material, or else were posts covered with hay or straw, timber being scarce, and only to be found along some water course. The soil was rich from the ashes of the burned prairies, and for years yielded abundantly of all kinds of grain. But when this grain was raised, the absence of machines to thresh it, offered poor inducements to break up the soil in large tracts. Such were the surroundings in the early settlement of Rock county, Minnesota, though, but a counterpart, I presume, of all frontier settlements. No locality, however, even though remote, having a fertile soil, with a healthy climate, will long remain isolated.

The census of 1870 gave a population in the county of but one hundred and thirty-eight persons. Soon after this year, immigration began pouring in, and to-day the county polls over eight hundred votes, which, estimated in accordance with the usual ratio of five inhabitants to a voter, gives us a population of over four thousand.

DISCOURAGEMENTS.

Our railroad facilities are good. The Saint Paul & Sioux City railroad built a branch from its main line through the county in 1876, since which time the country adjacent has rapidly improved, and immense quantities of grain have been raised, despite the many drawbacks which have come upon us. The grasshoppers were succeeded by a blight in 1878, caused by excessive hot weather in July, just as the wheat was passing from the milky to the doughy state. Had it been delayed for only ten days, the largest yield ever known would have been the result. We were not discouraged, and the Spring of 1879 saw an increase in the number of acres sown of one hundred per cent. The yield has not been satisfactory, and I am satisfied that the failure was due to two causes. First, the inability to properly prepare so much ground, and second, owing to the seed of the previous year not having been ripened, and in consequence not giving a

healthy plant. The combination of these two causes made every dry or hot spell tell on a plant, which could only survive under the most favorable circumstances.

Although my method of farming may not be new, or show any particular originality, still I may suggest some things that might help some less experienced man who tries his fortune on the frontier.

DESCRIPTIVE.

My farm comprises three hundred and twenty acres, adjoining Rock river on the west, and it consists of fifteen acres of timber, one hundred acres of natural meadow, five acres of timothy, and two hundred acres of plowed land. About one hundred acres of the plowed land is upland on the east side, and the remainder is bottom land of a deep, black, alluvial soil. The meadow receives the drainage of several sections on the east, if desired, by a natural run, which may be turned off by means of a dam at the foot of the bluff. To this plan I owe my success on my meadow, which is more valuable than the plowed land. The meadow yields each year from one to one and a half tons of fine blue-joint hay, and improves each year. Hay brings a fair price, generally four to six dollars per ton.

I have timber on the northwest corner of the farm, and on the south and east sides of it are my buildings, close to the river, thus affording shelter from the Winter storms, which usually come from the northwest. The river affords a fine opportunity for watering stock. The surface of my bottom land is quite smooth, with a descent of twenty-five feet to the west, in one hundred and sixty rods. It is well drained by Nature, except in one or two small patches, which each year I drain by open furrows. On the east side there is a small bluff. This soil is not as black, being slightly mixed with clay. I have the whole farm nearly surrounded with a row of trees, consisting of cottonwood and ash-leaved maples.

PLANTING AND HARVESTING.

The county is naturally well drained, consequently there

has been no open or tile draining done here. My first breaking was done on the bottom land near the river, extending each year in area, toward the bluff. The past season I sowed one hundred and forty-five acres of Spring wheat, ten acres of Winter rye, twenty-five acres of oats, ten acres of corn, nine acres of barley, one acre of potatoes, besides devoting one acre to strawberries, raspberries, currants, etc. The cost of raising per bushel, is as follows: wheat fifty-five cents, rye thirty-five cents, oats fifteen cents, corn fifteen cents, barley twenty-five cents, potatoes fifteen cents.

I use a sixteen inch sulky plow, worked by three horses. I find it more economical than a walking plow, and it does better work, besides being easier on the team and man to plow the same number of acres. I use a broadcast seeder, twelve hoes. I consider it preferable for drilling. I have a harrow of my own make, with eighty-two teeth of one-half inch, breadth ten and one-quarter feet, teeth slanting.

I use McCormick's Advance reaper (combined), which I consider more economical than a harvester or binder, as I can get grain bound by hand at the average cost of the wire per acre, and I also have a mower in the same machine. I usually finish harvesting grain before haying commences, except the tame grasses. I stack where convenient or the necessity of the land requires manuring, and await the finishing of haying. After haying I thresh and sell my wheat on the first market that offers me enough to cover expenses of harvesting, retaining the remainder of my small grain until the midwinter or Spring market. My corn is fed to hogs and marketed before the holidays, as I do not think it pays to fatten hogs in cold weather.

HOGS.

There is a great diversity of opinion as to the best breeds of hogs here. My favorites are the Bifield and Chester Whites crossed, although I have Magie and Berkshire. I commence fattening as soon as corn is glazed, giving plenty of pure water, and shelter from sun and rain. I keep but few together.

STOCK.

I have just enough cows to furnish my own butter and milk. Short-Horns are the especial favorites of farmers here, though little attention has been paid to stock raising until within the past two years. All young stock are herded in Summer, and milch cows are picketed. There is no creamery in the county, but there is a fine opening for one, together with a demand for good butter and cheese.

Horses bring good prices, ranging from one hundred to one hundred and seventy-five dollars each. Farmers in this vicinity show but little interest in rearing them. The Normans are my favorites for draft, and Black Hawk-Morgans for light work and roadsters. At our last county fair there was a very fine display of blooded horses; of blooded stock of all kinds, in fact, which awakened quite an enthusiasm on the subject of stock raising, a business which I am sure will prove a greater success among farmers than persistent grain raising.

There is no doubt of the adaptability of southwestern Minnesota to stock raising; to quote the opinion of the agricultural editor of the *St. Paul Dispatch:* "If rich soil, magnificent grasses and fine climate mean any thing in any country in the world, they mean some thing for the farmers of southwestern Minnesota. I do not believe there is a better country in all the great new Northwest for diversified agricultural industry than this region, or a more disastrous one for the persistent and entire cropping of wheat."

POULTRY.

Turkeys are raised in considerable quantities here. Bronze are the favorites, as they attain greater weight, but they are not as hardy as the common breeds.

I keep the common breed of white ducks, which are easily raised, and prove profitable for feathers. They make fine eating, and sell quite readily at one dollar per pair. I raise about one hundred each year.

I have no distinct breed of chickens, but those which I have had the past season have proved so remunerative that I

intend to build a park next season for their accommodation. They will pay well for the trouble and money invested, as I have made a profit of fifty cents from every hen the past Summer. I feed them corn, screenings of wheat, barley and oats, and in early Spring add meat, cut finely, and mixed with corn-meal.

FRUIT.

Apples have never been raised here, as the idea has been prevalent that this was not a fruit country. I have a good nursery now, and have twenty-five fine growing trees that will bear the coming season. Small fruit thrives well here. I have a quarter of an acre of strawberries, which yield well. I can not give the exact yield as I never kept an account, but I had sufficient for eating and canning. Gooseberries, currants and raspberries also do well. I had only enough, however, of these for family use.

Rock river is well supplied with fish, principally pike, pickerel, rock bass, and red suckers. It would be a fine thing to get some other varieties. I think some thing will be done in that line this coming Summer.

D. F. AKIN,

FARMINGTON, DAKOTA COUNTY.

Buildings — Stabling and Feeding Stock — Horses — Cattle — Sheep — Hogs — Bees — Fruit — Implements — Grain — Climate.

ROCK DELL FARM

is situated about two and a half miles northwest of Farmington, Dakota county, Minnesota, on the Minnesota division of the Chicago & St. Paul railroad, and one and three-quarter miles north of the Hastings and Dakota division of the same railroad. It consists of three hundred and thirty-five acres, about one hundred and thirty of which are low, level prairie, thirty acres each of meadow and timber, seventy acres of

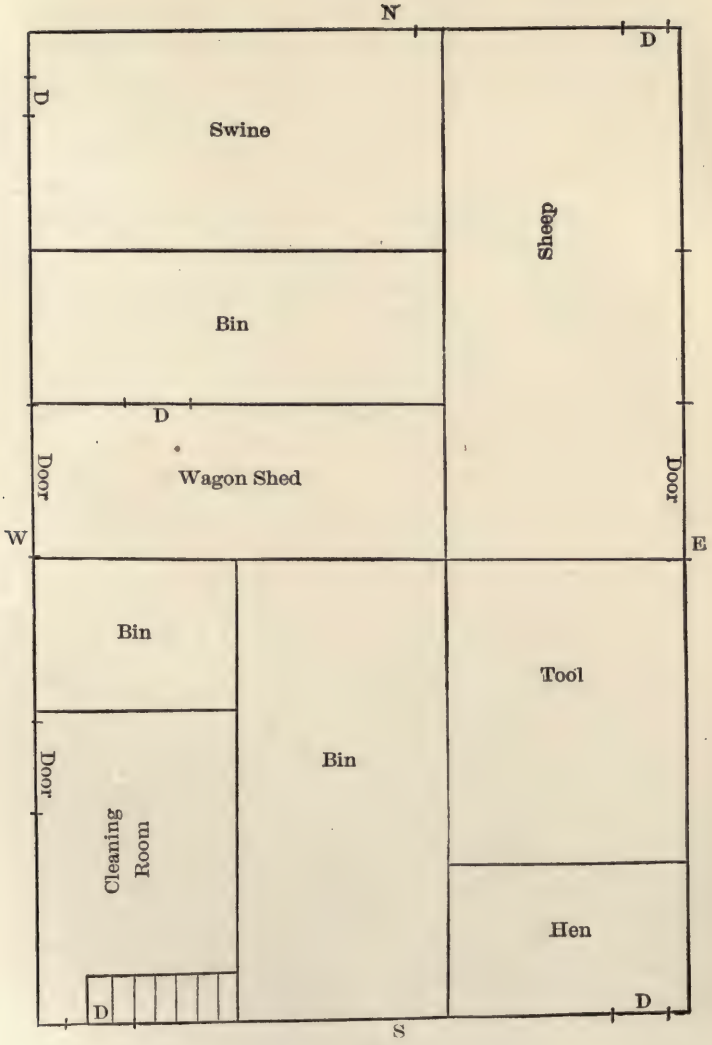
brush prairie, and the remaining two hundred and five acres high, rolling prairie. My great idea when selecting Government land was, if possible, to get all the natural conveniences, namely, wood, water, stone, meadow, and prairie, within the compass of a half section, for the purpose of running a farm devoted to mixed husbandry. I did not expect at that time, April, 1856, to obtain the advantages of the market created by the junction of two great railroads. Having begun thus early in the settlement of the State, on account of the distance to market, with the idea of feeding on the farm all the hay and coarse grain that could be raised and handled in good season, and finding it profitable, I have continued in the same old, and I think advisable rut, until the present time.

IMPROVEMENTS.

All of the improvements on this farm have been made with the same view of mixed husbandry. The buildings consist of the following: A two-story stone house, thirty-four feet square, with a kitchen twenty-one by thirty feet, and one and one-half story wood-shed, with a cellar under the whole of the large part, divided by a partition in order to have a place to keep the products of the cow away from the vegetables and other articles usually kept in a cellar (see plan of house), a barn, forty-eight by sixty-four feet, with posts twenty-eight feet, and cellar nine feet deep, devoted to cattle and horses and the manure that is not scattered between May and September; a one and a half story granary, wagon shed, tool house, hennery, pig-pen, and sheep shed, all included under one roof, thirty-four feet by fifty-two, divided as follows: for storing and cleaning grain, twenty-two by twenty-four feet; for wagons, eight by thirty-four feet; for tools, twelve by sixteen feet; for hens, eight by twelve feet, for sheep, twelve by forty-four feet, a pig-pen fourteen by sixteen feet, and an ice house twelve by twelve feet.

BARN.

The barn is built on a slope, so that on the west side, which stands parallel to the public road, the sill is nearly level with


N
D
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Cleaning
Room
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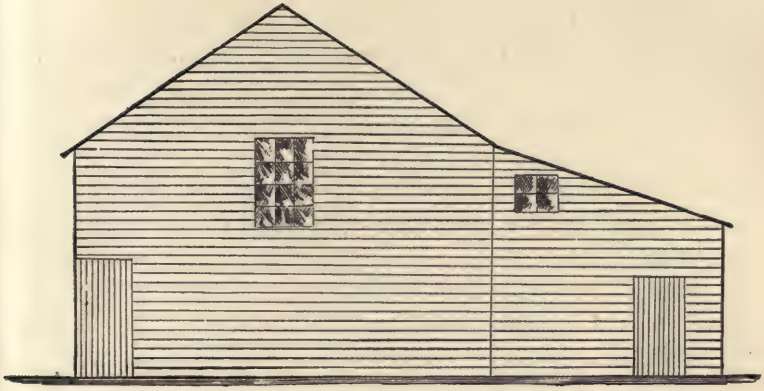
the road, while on the east side the natural ground is lower than the bottom of the cellar, giving perfect drainage. There is a driveway each way through the barn. The one east and west level with the public highway, the one north and south is eight feet above, and reached by an easy grade that a team can draw any common load up. The floor timbers of this driveway are left loose, to be taken out so the whole barn can be filled with a horse hay fork, and holds about one hundred and sixteen thousand solid feet. There are hay and straw shoots at the side for letting the fodder into the cellar for use there. For the foundation of walls a trench was dug four feet wide and six inches deep, which was filled with small stones pounded down solid as possible with a wooden maul, and soft mortar poured over the whole till filled, then the walls set in the middle, so there is a projection each side, making them rat proof.

STABLING STOCK.

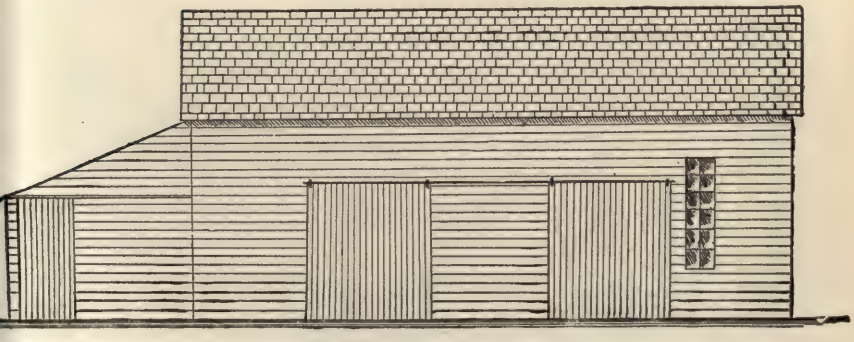
The barn was planned so that the owner could see every thing in place, and to make it easier for the help to keep the tools in their places than to leave them elsewhere. Eight horses are usually kept on the farm, each having his own harness and collar, especially fitted to him, hanging directly behind him, so there can be no mistake in harnessing. All the animals are named, and have their own places, so that any stranger can let them in and tie them without making any mistake, as each animal will go directly to his or her place. I do not use a stanchion, as the animals can not thus get their natural rest. They always, in their free state, lay their heads on their side, and whoever deprives them of this privilege takes a part of their comfort from them.

FEEDING.

The horses are fed in a box rack for hay, about two and a half feet wide, and three and a half deep—the bottom being level with their feet—to which they are tied. Small feed boxes, that will hold about twenty quarts, are nailed across the rack on top for each horse to be fed grain in, which consists of



SOUTH END ELEVATION.



WEST ELEVATION OF GRANARY.

two feeds of oats and one of corn in Winter, bran taking the place of corn in Summer. They are fed wild hay or straw, never tame hay any length of time, which if fed constantly surely gives them the heaves. Colts are fed bran for the first year; after that time, the same as the horses, and all have a handful of salt and wood ashes each week. Cattle are fed in a rack similar to that for the horses, only not so high. They are fed all the hay they will eat during the night from their rack, and bran or corn-meal once a day, except the milch cows, who are fed generously (that is, all they will eat without getting off their feed), of bran and corn-meal alternately, twice a day, with salt twice a week, and straw or corn-stalks in the yard. The calves are reared as follows: I feed new milk the first two weeks, then skimmed milk, taking a little older all the time, till they use the oldest. Better calves can be raised on plenty of old milk than on a short allowance of new.

HORSES.

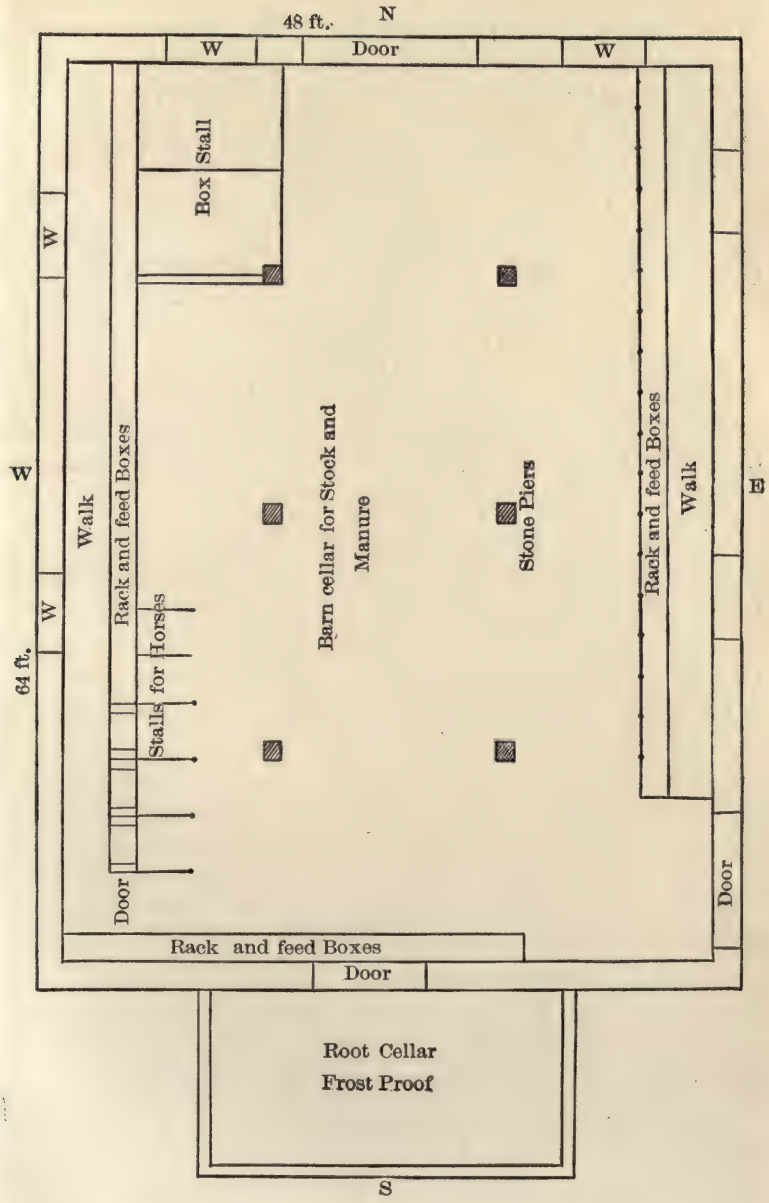
I would say that for farm work, my choice is a spirited, quick-stepping, good-natured horse, weighing from ten to thirteen hundred. I have tried the sixteen hundred Percherons, but do not like them, for they are too slow and heavy. I greatly prefer some of the trotting family mixed with what we call common stock.

CATTLE.

I have bred, in the cattle line, the Devons, Short-Horns, and Jerseys. Neither kind quite reaches the mark of the high calling for which it has been advertised, but after years of experimenting with the different breeds, I have settled on as the choice for my purposes the cross between a good milking strain of the Short-Horns and the Jerseys. The Short-Horns furnish the size, the Jerseys the splendid quality of milk for beautiful golden-colored butter.

SHEEP.

For sheep, I keep only the pure-blood South-Downs. They are acknowledged by all to be the best for mutton, and for hardiness they can not be beaten. For example: Last Spring,


48 ft.
N
W
Door
W
Box Stall
W
W
Walk
Rack and feed Boxes
Barn cellar for Stock and Manure
Stone Piers
Rack and feed Boxes
Walk
E
W
64 ft.
Stalls for Horses
Door
Door
Rack and feed Boxes
Door
Root Cellar
Frost Proof
S

for some reason, a ewe, which had dropped her lamb on Wednesday, got estrayed from it on Friday, about ten o'clock A. M. I found it the Sunday after at noon, put it with its mother, and for a wonder, after its two days' fast, it lived. They are far more domestic than the other varieties, besides being tamer, and always come home to their shed at night.

HOGS.

For hogs I prefer the cross between the Chester White and Suffolk. I have never taken a fancy to the Berkshire.

BEES.

I have kept bees, but find it takes too much time in the most busy season of the year to care for them. The moth is more destructive on bees here than in any other region in the United States. Still, some have made a success of bee-keeping.

FRUIT.

The cultivation of fruit has only been tried for the purpose of raising enough on the farm for home consumption. Of cherries, the common red do quite well here, but bear very sparsely. Apples have been experimented with for the last twenty years. I have found but few varieties that are perfectly hardy. Still there are enough to have a succession from July till July, but the longest keeper we have is a crab, not good for eating, but extra nice for sauce. There are new seedlings coming in, bearing each year, so persons wishing to raise their own apples can do so. All the small fruits grow to the greatest perfection.

There seems to be a principle in nature, that fruits attain more perfection the nearer they grow to their northern limit.

DAIRY.

Leaving the fruit yard and orchard with its six hundred apple trees, we enter the dairy, where is manufactured the butter and cheese of the farm. A revolving churn is used to make the butter, in which the grain of the latter is far better than in the old fashioned dash churn, besides the washing can all be done in the churn so that the lifting is dispensed with.

In making cheese we use a large galvanized iron vat for setting and warming the milk, and a hoop of the same for pressing in. For a press I took four sixteen inch, half inch carriage bolts, had the threads cut about six inches long, and put them through a two-inch plank, with a plank on top. With such a press a seven year old boy can press a cheese all it needs.

IMPLEMENTS.

The farm implements consist of plows, wagons, harrows, sleighs, a cornsheller, a two-horse tread power thresher, separator and cleaner combined, a horse corn plow, header, mowing machine, horse hay-rake, horse hay-fork, and all other small tools used on a farm. With the header to cut the grain and the thresher to thresh with at pleasure, the cost of cutting and threshing is lessened more than half.

GRAIN.

All the grain raised on the farm is fed on the place, except the wheat, which is made more of a specialty than any other one thing. It is impossible to give the cost per bushel of raising grain, as the yield per acre varies so much in different years. The cost per acre is usually about five dollars, including harvesting and storing. For a good crop I plow the ground in the Fall before any frost, then harrow. This, put in early in the Spring, always gives the best returns. The wheat when harvested is carried by the header into large beds or boxes on wagons drawn by horses, when it is taken directly to the place of storing, in barn or stack. I find that grain can be stored in a barn greener than in a stack and cure well; it makes no difference about the size of the mow. The threshing is done by a two-horse tread-power thresher, late in the Fall or during the Winter, when the stock need the straw. They appear to enjoy the fresh threshed straw, and use it most all up. During cold weather the grain threshes cleaner, and help is cheaper.

FOWLS.

Living on the prairie, I have no good place to keep ducks and geese, and so make the raising of turkeys a specialty in the

poultry line, having raised about one hundred this year, of the Bronze variety, which I think is the very best. I have not as yet a fancy hen house, but manage to keep the fowls comfortable in Winter

CLIMATIC.

In reference to the desirableness of this region for a home, I believe, taking every thing into consideration, it is the best location for farming in the United States. The people are healthy, and the stock vigorous and hearty. The land is rich and easily tilled; the water the purest and best. The markets are good, wood is plenty, and the climate equable, although from the extreme heat of Summer to Winter's blast, the variation of the thermometer is as great as any where else; still, the daily range is so much less than in other places, that the extremes are not so noticeable.

A. B. SWAINE,

ELYSIAN, LE SUEUR COUNTY.

Corn — Oats — Sugar Cane — Cows and Calves — Hogs — Fruit — Profits — Timber Farming.

LAKE FARM.

In the Spring of 1865, I came to Minnesota, and settled in the "big woods" in the town of Elysian, Le Sueur county. My farm consists of three fractional eighty acre lots, being a little less than a quarter section. My farming operations are necessarily small. My land is heavily timbered with oak, elm, basswood and maple, and is situated on the north shore of the center one of a chain of three lakes, which extend east and west, a distance of five miles. The road runs on the west side, also along the shore of a small lake. There is a lake on the northwest and one on the northeast corner, so that frost seldom does any damage before the middle of October. My house is

twenty by thirty feet, with a wing sixteen by thirty-two feet, and is situated on an elevation overlooking the lake.

I have cleared seventy acres, about half of which is seeded to timothy and clover, and is used for pasture and meadow. The other half of the land I have cultivated is cleared of stumps and planted and sowed in about equal proportions alternate years. Formerly Winter wheat did well here, yielding twenty-five to thirty-five bushels to the acre, but of late it has been Winter killed to such an extent that it is not considered a safe crop. During the fifteen years that I have harvested in this place, my crops have been slightly damaged four times; once by hail, once by grasshoppers, and twice by drouth. The lightest yield, damaged by hail, was twelve bushels, by grasshoppers, twenty bushels, by drouth eighteen and nineteen bushels, respectively, in 1878 and 1879. Had the grasshopper not troubled me the yield would probably have been thirty bushels, and for the years 1878 and 1879 it promised, at least, thirty-five. With the drouth for 1878 it was twenty bushels No. 3, for 1879 it was eighteen bushels of No. 1 to the acre, at machine measure.

CORN.

The average yield for the fifteen years I have farmed here, has been twenty-two and a half bushels, by weight; all except last year's crop, which was badly blighted and weighed only fifty-five pounds to the bushel. The soil is black, sandy loam, with clay subsoil. Early in the Fall I plow deep, and sow one and a half bushels to the acre as soon as the ground is dry enough to mellow up good, generally about the last of March or the first of April. I plow in the Fall for corn also. The first week in May I mark it both ways with a double-shovel plow four feet apart each way, and plant five to six kernels in a hill, of the Dent varieties. I find that one hundred bushels of ears to the acre is an average crop, but I have raised one hundred and sixty bushels to the acre, in favorable seasons. When the corn is about coming up, I give it a thorough harrowing, and when it is up so that I can follow the

rows, I commence cultivating, and follow it up till it is about waist high, after which I let it alone. I do not desire more than five nor less than four stalks in a hill. I plow deeper for corn than for wheat. The manure that is made on the place is put on the ground I design for corn. The corn is cut the first week in September, and put in shocks of eight hills square. After drying a short time it is husked, and the fodder bound and stacked, and fed to the stock in the Winter. All of the corn I raise is fed out on the farm.

OATS.

My oats are sown after the wheat is sown. I sow two and a half bushels to the acre. I have but once raised as small a crop as forty, and have raised as high as eighty bushels to the acre. I generally average fifty to sixty bushels.

POTATOES.

I plant whole potatoes, without sorting them. The amount of seed varies from twelve to fifteen bushels to the acre. I plant four feet apart each way, cultivate till half grown, and then hill them up, making a broad, flat hill. They yield from two hundred and fifty to three hundred bushels to the acre. If I can obtain twenty-five cents a bushel, or more, I sell them; if they will not bring that, I feed them to the stock.

SUGAR CANE.

I plant a few acres of the Early Golden cane every year, and make from six hundred to one thousand gallons of sirup, which sells readily at forty cents per gallon. I sold formerly for seventy-five cents to one dollar per gallon. The yield is from one hundred and sixty to two hundred gallons to the acre, if cultivated four feet apart each way, with from seven to ten stalks in a hill. It requires a little more care than corn, but the profit, even at thirty cents a gallon, is greater than on wheat at present prices, or at one dollar per bushel. I attribute my success in a measure to the selection of the best seed and a thorough preparation of the soil, together with alternate

cropping. Another requisite to success is to do the work in season.

COWS AND CALVES.

I raise horses, cattle, and hogs. My cattle are grade Durhams. I Winter them on timothy and clover hay and corn fodder, with grain enough to keep them in good condition. The heifers come in at two years old, and are nearly full-grown at that age. The calves run with their mothers, save the cows that I milk for family use. When I find that a cow gives an extra quantity of milk, which makes better butter, I keep her for use in my family. The calves generally attain a weight of five hundred pounds during the Summer, and are kept growing through the Winter. The heifers are always fit for beef, and sell well at a good price the Summer after they are two years old. I have found it more profitable to raise heifers than steers, and it pays better to insure the growth of young stock the first year by letting the calves run with the cows, than to take them off and make use of the milk for other purposes.

My horses and cattle are all stabled, and fed and watered regularly in the Winter. They all have access to the lakes for water in the Summer. I have abandoned sheep raising, on account of the ravages of dogs and wolves, although it is carried on with success in some localities.

HOGS.

Last year pork was low, for the first time in fifteen years, and at the price of corn, forty cents, it didn't pay the cost of feeding. It only brought one dollar and a half to two dollars and a half per hundred weight, but for several years before it had brought from four to eight dollars, and it was then more profitable to raise hogs than to raise cattle or wheat. My stock of hogs are of the Poland China breed, crossed with Chester White. I pasture them in the timber in the Summer, and feed them well so as to keep them growing. About the first of September, I commence fattening them by feeding them all the old corn they will eat, and the scum from the sorghum juice, while I am making sirup. This scum is equal to skim milk

or whey for fattening purposes. The pigs are dropped in the Summer or Fall, and they are fed enough to keep them in a thriving condition through the Winter. I slaughter them about the middle or last of November, when they weigh from four to five hundred pounds. Formerly I have tried to fatten Spring pigs, so as to save Wintering, and have succeeded in making them weigh two hundred and fifty to three hundred pounds, but they are more liable to accident, and the right sort of stock is not always to be had. So I find it best to rely on Summer or Fall pigs Wintered over. While fattening I let them have access to the lake. They are in a large yard, well sheltered, and when kept warm and dry are invariably healthy.

FRUIT.

I have a small orchard proportioned to the size of the farm. I have succeeded in raising several of the standard varieties, such as the Wealthy, Duchess of Oldenburg, Red Astrachan, and a few others.

PROFITS.

I usually receive over a dollar a bushel for wheat, so that taking into account the ordinary rent for land, one-third of the crop, at twenty-two and one-half bushels per acre, I have realized a little more than seven dollars an acre profit above expenses. My horses have sold at three and four years old at from one hundred to two hundred and twenty-five dollars each, and at the prices obtained for young stock, my pasture and meadow have yielded the same profit per acre. At the prices which I have received for my pork for the past fifteen years, corn has paid at least fifty cents a bushel.

TIMBER FARMING.

Tilling the soil and raising stock are not the only source of money-making for the timber farmer. After the ground has frozen and Winter has set in, the timber furnishes a means of livelihood, and the industrious farmer turns his attention to making railroad ties, cutting and drawing saw-logs, and chopping cord-wood. The price of ties delivered at the track of

the railroad averages about twenty-nine cents. Usually the price is about equally divided, paying respectively one-third each for the timber, making, and hauling; but more recently, on account of timber becoming scarce, it sells on the stump for twelve cents a tie. There is a great demand for all kinds of lumber that can be obtained in the "big woods," including elm, which is extensively used by the prairie farmers for fencing, and is considered better than pine for that purpose; basswood, which is used principally for building purposes; black walnut, butternut, oak, and maple, which finds a ready market at remunerative prices for manufacturing purposes. Usually we chop clean, and after culling every thing that can be used for the purposes above mentioned, the remainder is made into cord-wood, and either sold on the ground or hauled to market as may be chosen. Maple wood, dry, sells for from one dollar and seventy-five cents to two dollars and twenty-five cents, on the ground, and is eagerly sought for by the more wealthy prairie farmers and business men in villages and large towns; about the same price is paid for hauling. Basswood is worth from seventy-five cents to one dollar on the ground, and from one dollar and fifty cents to two dollars and fifty cents delivered, according to distance. Oak and elm wood bears the same proportion to these prices as its value for fuel. For chopping, maple costs seventy to seventy-five cents per cord; bass and mixed wood fifty to sixty cents. The number of cords per acre is, on an average, forty, from ten to twenty of it being maple. Taking the lowest estimate of cost for chopping and maple wood, it will be seen that the maple timber alone on the stump pays ten to twelve dollars an acre, and the remainder of the wood as much more, leaving out of account the mercantile timber, which with the labor expended in getting it out, is worth nearly or quite as much as the wood. The brush is all cut and piled as the chopping proceeds, so that in the Spring it is easily cleared and fitted for the plow. The first crop, being corn, needs but little cultivation after the first plowing, and seldom fails of producing at least one hundred bushels of ears to the acre, which

amply pays for the clearing and preparation of the soil. Formerly, a short time before seeding in the Spring, I tapped about five hundred maple trees, from which I made from one thousand to one thousand five hundred pounds of sugar, which for several years, commencing with the Spring of 1866, sold at twenty cents per pound. Of late, owing to the price, the injury to the trees from constant tapping, and the failure from some cause of good sugar weather, the sugar business does not pay, and the pride of the farm, a good sugar bush, is fast becoming a thing of the past.

The foregoing is not an overdrawn sketch, but simply a description of the Winter occupation of a timber farmer as a means of getting — not rich — but a living.

J. H. CUNNINGHAM,

HERSEY, NOBLES COUNTY.

Wind-break — Stock — Sheep — Grain — Soil — Planting — Buildings.

In the Spring of 1870, having in view the making of a home and model farm, I started from the eastern part of Minnesota, with a span of horses and a few hundred dollars, and made my way to the frontier of the State, determined to find something to suit me, if possible. In ten days I encamped on the banks of Graham lakes, in Nobles county, a spot that seemed to me more desirable than any thing previously seen. A stay of two days, and much examination of soil and advantages, convinced me that I had found a desirable place to settle on. I therefore secured three hundred and twenty acres of government land, overlooking, but not running to the lake, and extending south to Jack creek (a small stream of clear, running water). There are about two hundred and fifty acres of well-drained plow land, and seventy acres of bottom land, lying along the creek, which was, at that time, covered with a rank

growth of weeds and grasses. This land has, by repeated mowing, become a meadow of fine blue-joint grass, yielding annually one and a half to two tons of hay, equal to timothy hay. I erected a small log house, and a stable of sod for immediate use, as the nearest railroad station was seventy-five miles away, and lumber could not be had nearer.

WIND-BREAK.

The following year I started a wind-break of willows, cottonwoods and Lombardy poplars, on the north and west sides of my house, and in a few years had five acres planted with trees. They are a great benefit now.

STOCK.

I procured some Berkshire hogs, as pork brought a good price. About the time that I had a number of hogs, the price fell so that I could obtain more for the corn than I could for the pork. So I disposed of the hogs at once. I also had a number of cows. I raised their calves and purchased more, finding at first a good home market for all the cows and steers I had to spare. Soon there was a surplus, and we had to depend on Iowa feeders to come here and buy them. The price of butter was low at the same time; a fact which induced me three years ago to sell off all except what I required for home use. I put the proceeds into one hundred and twenty-five grade Merino sheep, upon which I have used a full-blood Merino buck, with excellent results.

SHEEP.

The sheep run in the prairie pasture of eighty acres during the Summer, and are brought into the yard every night. During the Winter I keep them in a shed open to the east, with a yard on that side, into which they can run. From the sides of this shed they are fed with hay at sunrise and sunset, and are allowed as much as they will eat up clean. No grain is fed to them. They run in a pasture every fine day. About once a week I draw a load of straw, and scatter it upon the ground for them to eat. There is a pond of half an acre in the

pasture, that affords good water the entire year for them. The lambs come about May tenth. The grass is then large enough to afford good pasturage, so that the ewes have plenty of milk, and will not disown their lambs, as they are apt to do earlier in the season. This year my expenses for shearing, hay, interest and taxes are sixty cents per head. The income from the wool, mutton and increase, is two dollars and twenty-five cents per head. The care I give them I can hardly estimate, as they usually come into the yard at night without being looked after, in Summer or in Winter.

GRAIN.

While I have raised stock of various kinds successfully, I have also tried to raise wheat, but have met with poor success. For seven years the grasshoppers came, either in the Spring or just before the harvest, and destroyed most of my crops. Last year I expected a good crop, but the heavy rains and hot sunshine in July, blighted the grain. Oats have proved a fair crop, and corn, where planted early and well tended, is also good. My crop last year footed up one hundred and twenty-five acres of wheat, yielding nothing, twenty-two acres of oats at forty bushels per acre, and twenty-five acres of corn, not all husked, but estimated at fifty bushels per acre of sound corn.

SOIL.

The soil of my farm is a very rich, black loam, from two to three feet deep, upon a subsoil of yellow clay. The soil is slightly impregnated with alkali, and is well adapted to raising either grain or stock. The wheat that has headed out before being destroyed by grasshoppers, looked very fine, and now that we are finally rid of the pests, I hope that we shall make a good showing in this county.

PLANTING.

Most of my plowing is done in the Fall. As soon as the ground is sufficiently thawed in the Spring, I start the harrow where wheat is to be sown, going over the ground twice. I sow one and a quarter bushels of wheat per acre, with a

drill, putting in the seed about four inches deep, thus insuring moisture for the seed, and preventing the wind from uncovering it, as it sometimes does, when the seed is sown broadcast. Oats and barley are sown in the same way, two and one-half bushels of each per acre. I then finish up the plowing not done in the Fall, as the corn should be planted before May tenth, to insure success. As soon as it is up so that I can see the rows, I start the sulky cultivator, and work the corn once a week until July fourth. After that I make hay until harvest, the last of July, when I harvest and stack. I use the Marsh harvester and self binder, which works well. As soon as I have completed the stacking, haying is again in order for two or three weeks, then I thresh and plow until the ground freezes — usually about the fifteenth of November — when I husk corn.

BUILDINGS.

My buildings consist of a house, twenty by thirty feet, twelve feet high, a stone milk house, twelve by fourteen feet, a barn, thirty by forty feet, sixteen feet high, and cattle and sheep sheds of crotches and rails, of an irregular shape, roofed with hay. These last cover thirteen hundred square feet. The barn is divided thus: fourteen by thirty feet of the east side are given to horses, having seven stalls. In front of them is the granary, eighteen by twenty-six feet, and the machinery part is twelve by twenty-six feet. Over the horses is a bin for holding one thousand bushels of oats; the remainder is for hay, except a small crib which I reserve for corn.

G. W. BUFFUM,

OWATONNA, STEELE COUNTY.

Dairy Farm — Points for Good Dairy Cow — Yield of Milk — Feed — Proceeds — Wheat — Fruit — Machinery — Barn.

Coming out of the army in 1865, with about twenty-five hundred dollars in money, my thoughts turned to where I should go and what I should do. Having always lived on a farm, I thought I could succeed at farming, if at nothing else, so I took Horace Greeley's advice, and in May, 1866, started for Steele county, Minnesota, where I bought two hundred acres of land for twenty-five hundred dollars.

There were on my place, a log house and a small stable; twenty-five acres of ground had been broken. In June, I went back after my family, which consisted of a wife only, and we set out for our new home, in a lumber wagon.

I started out in life to pay as I went, which is always a good rule.

My original farm consisted of prairie one hundred and twenty acres, timber forty acres, and marsh or meadow forty acres. Our people here came with but little money, and wheat giving the quickest returns, they naturally turned their attention to its production.

DAIRIES.

From 1865 to 1871, I devoted my time entirely to wheat and stock, planting but little corn, and only oats enough for my horses. My farm being new, and the manure that accumulated being applied to the knolls and oldest cultivated soil, my fullest expectations were realized for the first few years; but, knowing that the soil could not long stand the strain of continual cropping with wheat, I became, in the Spring of 1871, a patron of a cheese factory that started near my place—furnishing from sixteen to twenty-two cows. Cheese was worth, at that time, from fifteen to eighteen cents per pound.

After the first season, I found I had much to learn in the selection and treatment of cows; my first year's results at the factory (although as good as my neighbor's), were not satisfactory. The price of cheese was good, but the quantity of milk small, being only about twenty-eight hundred pounds per cow, for six months—from May first to November first. I found I was feeding too many cows for the milk I was getting, consequently I sold, or turned into beef, all of my poorest milkers, and bought new, selecting what I thought to be deep milkers. But not more than half of them would fill the bill, so I posted myself on the subject, by reading different works on dairying, and using my own judgment as to the diversity of opinions of different authors. When cheese was the object sought, I selected from our best native cows, and crossed with an Ayrshire bull, letting the heifers come in at two years old.

I then found that the pasture should be divided into two lots, changing as often as once a week, and that cows should have regular milkers, and no scolding or harsh treatment should be allowed in the dairy.

POINTS FOR GOOD DAIRY COWS.

It is not the largest cows that always give the best results. Select a cow with fine hair, soft hide, thin neck, a mild, bright, full eye, small, smooth horn, a large stomach, fine leg and a small tail; and with good care I will guarantee that such will fill the pail.

YIELD OF MILK.

A good dairy cow ought to give four thousand five hundred pounds of milk in one hundred and eighty days, after calving; and for the next one hundred and twenty days, she ought to make from sixty to eighty pounds of butter, going dry not over sixty days. During my eight years in the dairy business, I have raised the yield of milk per cow from two thousand eight hundred to over four thousand pounds in six months' milking, from May 1st to November 1st; and I am sure that I have had many cows that would reach five thousand

pounds each. The gross annual receipts per cow, during the eight years, were about forty dollars.

FEED.

Provide green fodder for Fall use, or when the pasture begins to fail. I have found the evergreen sweet corn, sown in drills three feet apart, and worked with horse and cultivator, as other corn, to give fine results in supplying the deficiency. Aside from the best pasture of clover, timothy, and wild grasses for Summer, and good, early cut hay for Winter, I have used the evergreen sweet corn for Fall feed, and wheat bran for Winter, and have always had my cows fat in the Spring, forming a reservoir to draw upon in the Summer. Stock should be kept in a thriving condition the year through. It is a grave mistake to allow them to fall off in condition one part of the season to be made up at the expense of the growth during the remainder of the year.

PROCEEDS.

The proceeds from my cows have built me a house costing $2,300, a barn costing $1,200, and I still find a balance in their favor. I think I have raised as much or more wheat than I would, if I had not kept cows; and, instead of having a farm exhausted by continual cropping to wheat, my farm is under a high state of cultivation.

WHEAT.

From 1865 to 1878, I find that my wheat yield has averaged a fraction over nineteen bushels per acre, sometimes yielding as high as thirty bushels, and again as low as eight or ten. I also find the price, for the time referred to, averages $1.09 per bushel, the highest being $1.80 and the lowest sixty-five cents. I have usually sold on contract as soon as possible after threshing, to be delivered the last of August (if the weather would permit of threshing), or carry it over until the next May, June, or July. I think the rule will hold good to get your crop into market as early as possible, or hold it till the bulk of the crop has passed out of first hands. The cost of raising wheat depends

on location, soil, and cost of labor. In Steele county the farms are not suitable for the production of wheat alone, being cut up more or less in small strips of meadow, sloughs, groves of timber, lakes, etc., leaving the wheat land not more than one-half of the whole area, and that broken in small lots of from ten to one hundred acres, making it much more expensive to work than unbroken sections. I estimate the cost of raising wheat in our section of country, from eight to ten dollars per acre, counting nothing on capital invested and no wear on machinery. I would divide it up as follows, taking twenty bushels per acre as an average crop (more per acre would increase the cost and less would diminish it, the principal difference being in the threshing): Plowing, $1.50; seed, at $1.00 per bushel, $1.75; seeding, seventy-five cents; harvesting and shocking, $1.75; threshing, $3.00; making $8.75. These figures make no estimate for rainy days, break-downs, etc., which are always attended with more or less expense. If the grain is stacked, the expense is a little more.

FRUIT.

Being a lover of fruit I started my orchard almost as soon as I commenced housekeeping, and am proud of my success. I sent to Beaver Dam, Wisconsin, for my first trees, in the Spring of 1866. I have three hundred and fifty trees in all, nearly two hundred of these bearing. I sold over one hundred bushels of apples the past season. I started with the crab variety and gradually worked into the standard fruit. My mode of treatment has been clean cultivation for four or five years, then seeding down to clover, and keeping the trees mulched with light horse manure or straw.

MACHINERY.

Machinery is an important item, what to buy, and how to take care of it. I have always bought for cash, or on thirty or sixty days' time, thereby saving from ten to fifteen per cent. All machinery should be housed as soon as you are through using it. If you have no barn or machine shed, drive some posts in the ground, lay poles across, and cover with hay or straw. In

new countries there is more machinery spoiled by neglect and exposure to rain and the hot sun, than by actual wear.

What machinery to use, depends very much on the soil; if the latter is sandy, I prefer the drill for seeding, as it gets in deeper and more evenly. I use both broadcast seeder and drill on my farm, and can see no particular difference. I sow my clover and herd-grass with drill, and drag once after it. I use the John Deere sulky plow, and think it a great improvement over the walking plow. I have used the Norwegian plow, made at Beloit, Wisconsin, and for a walking plow I like it very much.

In cutting my grain I have used the Marsh harvester for eight years, averaging one hundred acres per year. In all that time, I have not expended over six dollars for repairs, and it does as good work as ever. What is true with the harvester, holds good with the seeder, mower, horse rake, plows, harrows, and, in fact, all implements used on the farm. I have a place for every tool, and see that it is in its place, for we may work ever so hard, and if we do not take care of what we have, we will always be poor.

BARN.

My stock and hay barn is on the north side of the road, with a descent to the north; the building faces the south, is forty by fifty feet, and eighteen feet posted; and there is a basement, ten feet high, under the whole. In the basement I have for my stock two tier of stalls, forty feet each, and each containing twelve stanchions, making room for twenty-four head of cattle. I use nine feet, from the stanchion back to the wall or partition, divided as follows: four and one-half foot platform for cows to stand on; then a drop fifteen inches wide by two inches deep, and a walk of three feet, back of drop. My feeding alley is ten feet wide, and the stock face each other. I allow three feet of space for each cow, and seven inches for the neck when locked in, which I think the safest and most convenient way of tying up cattle. I have never found a creature loose, after being thus fastened. I have five windows in my basement, sixteen by thirty-six inches, hung on hinges, to admit light and

fresh air. No basement is complete without good light and ventilation.

My horses occupy fourteen feet on the other end of basement, with a six foot alley in front, where is a good well of water with pump and spout, to conduct water outside in a trough, to the yard. My oats for horses and meal for cattle, are brought into the basement by spouts from bins above. My hay is taken from the mow to the barn floor, and then direct to the feeding alleys below. In the second story is a twelve feet floor, running lengthwise of the barn; on one side is a hay mow, fourteen by fifty feet; the other side is divided as follows: a space eight by fourteen feet is used for oat bins and grain for stock, giving nearly one-half the whole space for machinery, wagons, etc.; this leaves a ten by fourteen foot hay mow, the whole length of the building on that side of the barn floor, with a stairway going from barn floor to the alley in front of horses. I used about twenty cords of stone for the basement wall, and the lower side of the drive-way, which is at both ends, I covered with second quality flooring, and put on three coats of paint. I have a good ventilator on top of barn, and a weathercock in the form of a horse.

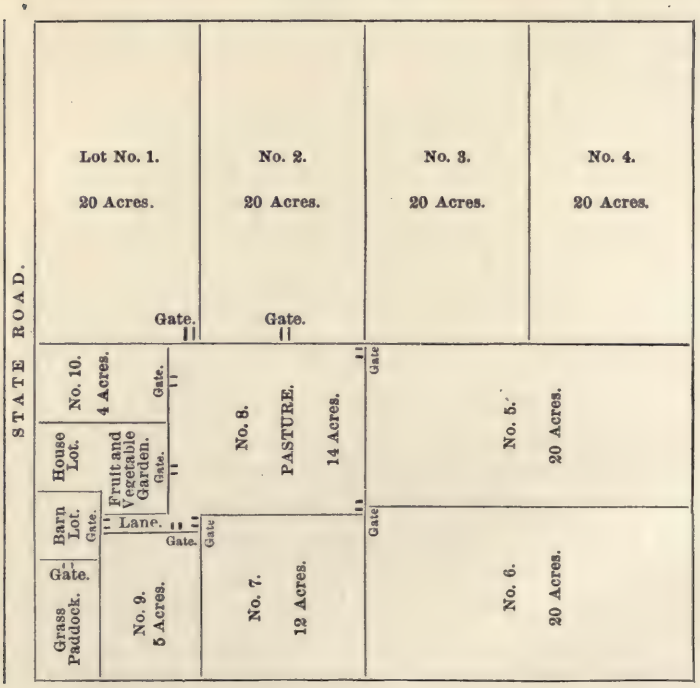
I am farming on two hundred acres of prairie, of which I use about one hundred acres for wheat each year, seeding to clover more or less, and plowing up some of the grass ground.

In conclusion, I will say that for climate, good water, plenty of wood, and deep, rich soil, Nature has done as much for our section of the country as for any part of the great Northwest.

P. L. SHARE,

ROSEMONT, DAKOTA COUNTY.

Admirable Division of a Quarter Section — Fallowing and Manuring.



I have one hundred and sixty acres under cultivation and laid off in fields as per plan. You will see that I have no land wasted for drive-way but the lane from the barnyard into the pasture lot. The pasture field is permanent, and has now been in grass for fifteen years, and is seeded with timothy and blue grass, which have produced immense crops. During 1879, I kept on full feed sixteen head of stock until ground was covered

with snow. I do my farming differently from many in Minnesota. In the first place, I take only three crops from the ground, and then manure heavily and Summer fallow every third year. I sod twenty acres with timothy, and clear for mowing, which gives me twenty acres sod to plow every third year, though each year I have twenty acres fallow. By this course I have only eighty acres in grain each year. I find my fallow ground produces as well as, if not better than the first crop from prairie sod. I have great faith in barnyard manure. I burn no straw, stable all my stock, convert the straw into manure, drawing out from two to three hundred loads yearly on my fallow ground.

JAMES T. PRICE,

EYOTA, OLMSTEAD COUNTY.

Mixed Husbandry — Buildings — Fruit — Artificial Groves — Stock.

This farm is located in Olmstead county, Minnesota, one and a half miles south of the village of Eyota, through which that great thoroughfare, the Chicago & Northwestern railroad, passes. I have over six hundred acres in my farm. I have grown wheat with profit for twenty years, and this grain has yielded from twenty-five to thirty bushels per acre. My practice is to pursue a rotation of crops, wheat, oats, barley, corn, and roots of various kinds, keeping nearly one-half of my land in clover and timothy. In the year 1879, I had seventy acres of clover seed to thresh, that yielded six bushels per acre. The land is rolling, and was, before being cleared, burr oak and hazel brush land. My farm is under a good state of cultivation.

BUILDINGS.

I have two good dwelling houses for laborers, besides my large two-story dwelling. My front yard is supplied with a liberal

variety of shrubbery. I have a large and well cultivated vegetable garden.

I have two large barns, with a number of sheds and stables for the protection of stock. Six or seven acres are inclosed and divided up for the comfort and safety of stock. My farm has an abundant supply of good water, as it has a number of living springs and seven wells, with wind power for some of the wells. My yards and buildings are protected by forty-five acres of natural and seventeen acres of artificial groves.

FRUIT.

My orchard contains five acres, in which I have planted a variety of fruit. I prefer the Duchess and the Wealthy apple, considering them best and safest to raise in this State. Of the small fruits, I have currants, strawberries, and grapes, all of which have proved a success.

ARTIFICIAL GROVES.

My artificial groves containing Lombardy poplar, cottonwood, willow, soft maple, Balm of Gilead, European larch, and some two hundred evergreens. I have one hundred and sixty rods of willow for hedge, but I think Barberry wood is much better for that purpose. I have six hundred and eighty rods of shade trees on the sides of the road, one rod apart. My farm is inclosed by four hundred and sixty rods of wire fence. The remainder is fenced with boards and rails.

STOCK.

My stock numbers horses, some cattle of a good quality, and some twenty hogs, but I make a specialty of sheep.

I keep six hundred of these animals, of the very best breed, which produce over four thousand pounds of wool each year. My method of feeding my stock is to give considerable straw, oats, and corn to horses, corn to cattle, sheep, and swine, which makes beef, pork, and mutton in the Winter. I have used various kinds of fertilizers, but find clover and stock are the two best. My land is a deep brown clay loam, with a clay subsoil.

NEBRASKA.

CHARLES H. WALKER,

BLOOMINGTON, FRANKLIN COUNTY.

Timber Culture Act—Its Provisions—How Carried Out—Congress Assists—Russian Furnaces.

THE TIMBER CULTURE ACT.

The passage of the Timber Culture Act, in 1873, inaugurated a new era in forest culture. Much had been written of its importance. Legislatures had fostered it by exemptions from taxation. Agricultural societies had offered premiums for its encouragement, and the Nebraska State Board of Agriculture, as a further stimulant, had appointed a day annually to be observed in planting fruit trees, which it designated as "Arbor Day." All of these means had been resorted to in endeavoring to create an interest in the cultivation of forest trees, and resulted in but limited success. The masses still remained indifferent to its importance. As a crop to be raised and marketed, the returns were too slow. As an improvement, there were too many that took precedent. Timber was recognized as an agreeable protection, but it was regarded as an expensive luxury.

THE PROVISIONS OF THE ACT.

The Timber Culture Act of 1873, provided that one timber culture entry of one hundred and sixty acres could be taken on each section of land naturally devoid of timber; that forty acres should be broken within three, and planted within four years to timber, in rows not exceeding twelve feet apart each way. And upon proof that it had been kept in a good

healthy and growing condition, at the expiration of ten years a patent should be issued for it.

The provisions were considered so liberal that large numbers of claims were soon taken, wherever the public lands were receiving settlers. As a result, people heretofore indifferent, were at once engaged in investigating the most economical system for cultivating them. A theory became prevalent that by plowing strips six feet wide for each row, a saving of one-half of the breaking could be made, without expense to the growing timber; but the first experiments proved it was not economy. The entire ground needed breaking to receive and absorb the water that fell, and so this practice was abandoned.

MISTAKES IN PLANTING.

Some of the early timber culture claims were planted with trees from six and eight feet high, but those who planted thrifty young trees, from eighteen inches to two feet high, or who sowed seed, met with far better results, and the practice of planting large trees within the forest or orchard has generally been given up. It has been found impracticable to transplant large trees with sufficient roots to feed themselves, even with the tops cut back. They start slow, and in their thriftless condition are more subject to the ravages of insects, while the economy of labor in transplanting is greatly in favor of the young trees; but the more universal practice now is to plant the seed where the trees are to grow. It is true that they can be cultivated more cheaply the first season in a nursery, but considering the expense in transplanting, and the loss in doing it, together with the more vigorous growth they make if undisturbed, it is considered economy to plant the seed where they are to be grown.

It was soon discovered that young trees planted twelve feet apart threw out strong lateral branches, instead of one straight, vigorous shoot; that they grew low and bushy, lacking in characteristic symmetry, and that they would prove less valuable for timber purposes, than if grown with a longer trunk. With this knowledge it soon became a practice to

plant much thicker than required by law, with the view to thinning out as the trees increased in size.

CHANGES IN THE LAW.

The attention of Congress was called to this fact, and in 1878 the law was radically changed, so as to require but ten acres to be planted in timber. It further required they should be planted four feet apart, or twenty-seven hundred trees in round numbers to the acre; that five acres should be broken the first year, prepared for the planting during the second year, and that they should be planted the third year; that the second five acres should be broken the second year, prepared for planting the third year, and planted the fourth year; and that if the timber were kept in a growing condition (provided not less than six hundred and seventy-five trees were thus growing on each acre), a patent should be issued for the quarter section of land at the expiration of eight years.

PRODUCTIVE OF GOOD RESULTS.

The amendment was a wise one. Experience had taught that too much had been required under the old law. Many that desired to avail themselves of its benefits had not the means to faithfully comply with its requirements. There is little room left for improvement, except Congress should provide that one-quarter of each section should be set apart for the cultivation of timber, and that if the tract at any time be abandoned, it could only be taken again under the Timber Culture Act. In that event there would be at least one grove of ten acres on every section, whereas, under the present law, a timber culture entry may be relinquished, and converted into a homestead or pre-emption entry, and the country thereby deprived of the influence the forest would exert. It would also tend to discourage speculation in this class of claims. In this connection it is also thought that it would be a wholesome amendment to the homestead law, if it was amended so that at least four acres of timber be required on all homesteads on prairie lands, before proof could be made. The indirect influence of the Timber Culture Act in educating the masses

in the art of growing timber, is not among the least of the benefits that have grown out of it. The planting of a few thousand trees in communities where the law has been operative, is not now considered much of a feat; whereas, in communities where it has not been in operation, it is regarded as an onerous task. Many homes are surrounded by beautiful groves, that owe their existence to a cultivated taste and knowledge received through practical lessons taught by experience in cultivating timber claims under this act; and from our standpoint it is impossible to estimate the result of its influence upon the country a generation hence.

HOW AND WHAT TO PLANT.

The timber is usually planted in a solid body, without reference to any laws of landscape architecture, but there are some who give attention to the effects in laying out their grove. It would add greatly to the beauty of the country, and would give it an appearance of greater thrift, if all did; but so few are educated in that science that it can not be expected. The inquiry that is being made with regard to different kinds of timber not indigenous to the soil, is a step in that direction. At first the timber almost universally planted was cottonwood, but box elder, ash, maple, elm and black walnut soon found a place in the list, and now the oaks and ashes, foreign to the soil, butternuts, chestnuts, catalpa, and many other deciduous trees, have been added to the list, and in some instances soon grew.

FRUIT CULTURE.

The influence of the Timber Culture Law has not been confined to forest culture. It has awakened a spirit of inquiry on the subject of fruit culture also. Farmers are learning that they can propagate their own fruit trees as well as their own forest trees, and many that would not have felt able to make a bill of fruit trees for an orchard for years to come, are starting in a modest way from the seed or the root graft.

In conclusion, I predict that in a very few years the most

beautiful part of the prairie country of the West will be found where the influence of the Timber Culture Act has been felt.

THE MENNONITES.

Within the last few years there has been an immigration of Germans from Russia into different parts of the West. They entertain a peculiar religious faith, and among other things are non-combatants. About one hundred years ago they made a treaty with Russia that exempted them from military duty, and settled in a country in the south of Russia, similarly destitute of timber to our own Western prairies. As the term of their treaty was about to expire so that they would be subject to military duty, they have sought an asylum in the United States.

HAY OVEN.

They have brought with them many ideas of economy that were not understood by our own people, and among them a peculiar furnace for heating and cooking, in which they use light fuel, such as straw, hay, cornstalks, or weeds. It is built in the side of a room, and forms part of a partition, so that one unacquainted with it would mistake it for a closet. It is made to heat two or more rooms, according to the conveniences of the internal structure of the house.

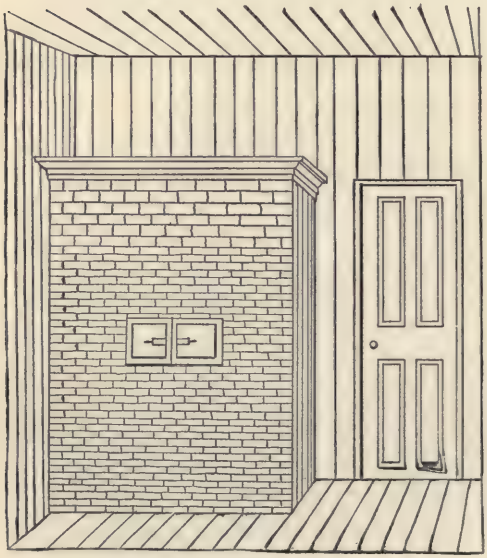
In the coldest weather it requires but two fires a day to keep an ordinary room comfortable. They are constructed both for simply heating, and for heating and cooking, and only differ in the building of an oven in those that are intended for cooking. Articles to be cooked, whether to be boiled or baked, are set in the oven and the door is closed. Furnaces are also built in which large kettles are set for heating water.

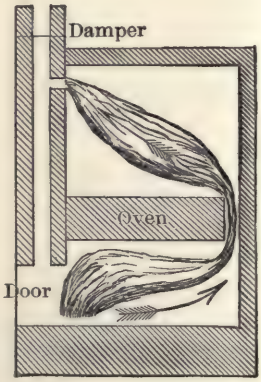
The principle might be adapted as well to heating arrangements for greenhouses, poultry houses, and farm hospitals for the comfort and safety of sows, ewes, cows or mares about to have young, and unquestionably would be a profitable investment in the West, where so much roughness is wasted. Its safety from fire should strongly recommend it. It could also be arranged with economy, for evaporating fruit and vegetables.

The accompanying illustration shows the construction of a

furnace in house near Fairbury, Jefferson county, Nebraska, and will serve to illustrate the principle. With a little inventive genius it could be changed to meet the wants of any requirement. It is constructed of brick, except the doors and dampers, which are of iron, and are made as nearly air-tight as possible—at least as nearly so as are ordinary stove doors.

In the one described, three armsful of cornstalks, the refuse from the manger, each about what a person could carry under his arm, constituted the fuel for the morning fire.





When the fire is being kindled the damper is kept open, the fuel put in by handsful and allowed to burn to a coal. When it ceases blazing the door and damper is closed, and the heated air retained in the furnace. The furnace herein illustrated cost twenty-five dollars. Suitable castings are kept by many of our leading stove dealers. When not, they may be ordered from the manufacturers. The dimensions of this furnace are five and one-half feet long, seven feet high. and twenty-eight inches wide.

In a well finished house it should be plastered. In furnaces made exclusively for heating purposes, sheet iron is used to conduct the heated air backward and forward in the furnace. The bottom of the oven is made of plate iron eight inches wide, which is supported by iron tiles, an edge resting on each flange of the tile. The shape of the tile or a sectional diagram looks something like this:

ANDREW SULZMAN,

TECUMSEH, JOHNSON COUNTY.

Cheap Out-Buildings — Timber Culture — Orchard — Corn and Stock.

In the Spring of 1868, I located here, on wild prairie, two miles east of Tecumseh, the county seat of Johnson county, Nebraska, and one mile east of the great Nemaha river. My farm contains three hundred and twenty acres of prairie land, being surrounded by a good Osage orange hedge, and a belt of timber, about three rods wide, on the north side. I have inclosed ten acres with a hedge and a belt of timber, two rods wide, for orchard, building site, and stock lots, but find I have scarcely room enough, and might better have enclosed twenty acres instead of ten.

BUILDINGS.

My buildings at present are not very extensive, but I design to make considerable improvement. My house is eighteen by twenty-six, one and one-half stories high, with a good basement for kitchen and cellar. I have one good smoke house, and one granary, but my barn and sheds are temporary. I built my sheds of rough lumber, poles and straw. My cattle shed is sixteen feet wide, and about eighty feet long, having its north side and each end boarded up six feet high, with ridge

pole in center about eight feet high, then rafters, made of poles, from sides to center, and long brush laid across the rafters; stack my grain near by, and when threshing, run the straw on the shed, and make the roof in the shape of a straw rick. I make my hog sheds the same way, but not quite so high. The above make cheap and comfortable sheds, lasting from six to eight years.

TIMBER.

In the Spring of 1870, I planted eight acres with timber, of several varieties — black walnut, soft maple, cottonwood, and box elder. For black walnut I plowed my land and made furrows with the plow eight feet apart. I planted the nuts, as soon as the same were matured, from four to six feet apart. They sprouted and came up the following Spring, and I cultivated the same for about four years, keeping them as clean from weeds as I would my cornfield, and the lower limbs trimmed off. My trees are now from six to eight inches in diameter, and have produced nuts for two seasons. I planted the seed of my soft maples as soon as the same was matured, sometime in May, about the same distance apart as the black walnut, and cultivated the same. I raised my cottonwood from cuttings, planted about the same distance apart, and cultivated the same as the former. I got some young box elder trees in the timber, and transplanted early in Spring. I have also some honey locust, from the seed, which were planted in nursery rows, transplanted at two years old, and cultivated for several years. According to my experience, the black walnut and honey locust are the best varieties of forest trees that we can plant for groves, either for beauty, protection, or timber. The cottonwood grows much the fastest, but nothing else will grow within four rods of it. Cottonwood trees should not be planted for a belt around a farm or orchard, because they send their roots out in every direction, at least the distance of the tree's hight, absorbing all the moisture in the soil, consequently you can not successfully grow an Osage orange hedge, or fruit trees, within reach of their roots.

ORCHARD.

I have six acres in an apple orchard. Nine years ago I planted one hundred and twenty trees, which have been bearing for three years, producing fine fruit. The remainder, about two hundred and fifty trees, I planted two years ago. Previous to planting my trees, I plowed and harrowed the land; then took a good team and plow, and laid off the distance I wanted my trees apart. I commenced on one side of my orchard, set three stakes and ran three furrows, plowing one each way, and leaving a middle of about eight inches wide. I plowed out the same with the third furrow, having a man to bear on the plow beam all the time, and plowed as deep as the team was able to draw the plow. I next measured the distance for the second row of trees, plowed the same, and so continued until the rows were all laid off one way. I then crossed the furrows, and laid off the other way in the same manner, three furrows to the row. In preparing my land in this way, I accomplished two objects. First, I made easy the task of planting, because very little digging was required; and second, the subsoil being loosened, afforded an under drain for surplus water. In my first orchard I planted three-year old trees, which did well; in the last orchard I planted two, three, and four-year old trees, but I would not plant four-year old trees again if they were furnished me gratis. Two-year old trees are the most desirable, because they require less labor in planting, are surer, and more vigorous in growing, and a proper head can be formed with less injury to the tree. Four-year old trees generally have been neglected in the nursery, consequently they require considerable trimming to form a proper head, and this will make them rough and knotty. I think a low headed tree is the best for this country. I formed mine from two to three feet from the ground, and then kept trimming them to give a good shape to the trees. Those that are inclined upwards require trimming only inside. I think it improves an orchard to fertilize the land, the trees will grow more thriftily and smoother. I planted my first orchard

eighteen feet apart, and the last thirty feet, but I think twenty-five feet is the proper distance for a prairie country.

I planted pears, peaches, and cherries. My pears are too young to bear, but do well in this country. I have had great success with peaches and cherries. I planted all kinds of small fruit, which I always mulch, to keep the ground moist and fertilize it. Cultivating disturbs the roots.

GRAPES.

I am growing the Concord grape, this variety being the most profitable for farmers to raise in this latitude, because it is hardy, does not require covering in Winter, and bears well. I made the rows six feet wide, and planted eight feet apart in the row. I set posts and stretched two lines of fence wire to train the vines on. I trim in Winter, and pinch the ends of the runners during the growing season. This is a good country for grapes, because the atmosphere is pure and dry, consequently they are not so liable to mildew and rot.

BERRIES.

Am succeeding with currants and gooseberries, the former of which will not do well without mulching. I always have a bed of strawberries sufficient for home consumption. Sometimes I plant in rows three feet apart, and cultivate between. In the Spring of 1878, I planted a bed in rows eighteen inches apart, kept them clean the first year, then let them run together, and the second season we had a good crop. I cover these with straw late in the Fall. Many farmers neglect small fruit altogether, which should not be, for they are valuable for the table, and pay well for the labor expended.

To be successful in farming, I find it necessary to lay well matured plans for a following season's operations, and execute them according to the best of my ability. I am compelled sometimes to make slight changes, but on the whole, I aim to carry them out.

I run a grain and stock farm, selling my wheat, which is shipped to Chicago and St. Louis. I feed all my corn, oats, rye, and hay, designing to increase my stock, because it pays

much better to condense our grain and convert the same into pork, beef, mutton, and wool. It costs about eighteen cents per bushel to ship corn from here to Chicago, margin and commission included, whereas, if converted into pork, it costs about eight cents per bushel, and if converted into beef about five cents per bushel transportation.

MACHINERY AND IMPLEMENTS.

I use Haines header to harvest my grain, but I would prefer to have it cut with a harvester, and bound, in order to stack the grain near my stock lot, where the straw is needed. To save grain in good condition with a header, it must be well matured, free from weeds, and stacked in narrow ricks.

I use the Win sulky plow, an iron beam, three-horse stirring plow, and a large three-horse harrow. It does not pay to either plow or harrow with one team in this country. One man can just as well plow three acres per day as two, and harrow twenty acres instead of ten or twelve. All that is required is a proper implement and three good horses or mules. I use Brown's corn planter, but the Keystone is just as good. I have not tested the check rower myself, but I believe it to be a success. I use the Wier cultivator. There is a certain amount of machinery required on a farm, but the farmers in this western country have purchased entirely too much machinery for their own benefit. A machine is expensive, consequently it should save labor; but if there are too many in use, this object is not accomplished. For instance, two farmers that raise one hundred acres of small grain purchase each a grain harvester of some kind, when one machine could harvest the grain for both, if properly managed. Then the expenses of harvesting are increased by the purchase of a machine not needed, and in the hiring of extra help which it made necessary.

LAND UNDER CULTIVATION.

I cultivate two hundred acres in grain, ten in oats, twenty in rye, seventy in wheat, and one hundred acres in corn. I have fifty acres in timothy and blue grass for pasture, and intend to seed down more. To prepare my land for grass, I

plow immediately after harvest, and harrow several times previous to sowing. I sow from the middle to the latter part of August, about one peck of timothy and three pounds of blue grass seed, per acre; harrow once after seeding. My grass generally comes up quick, and makes a good growth the same Fall, being prepared to withstand the Winter. The blue grass does not make much appearance the first season, but will increase and eventually drive out the timothy. I prepared my land the same way, when I seeded my house yard, eight years ago, but sowed two-thirds of blue grass to one-third of timothy, and the blue grass has taken full possession, making a nice lawn. I have generally succeeded, by preparing my land well and sowing grass seed in August. If there are thin spots on the land, it will pay to fertilize with barnyard manure, previous to plowing the land, but if this be neglected, top dress in the Fall. I have no meadow of tame grass, as I make prairie hay, but the rule given above will hold good for seeding of meadows, omitting the blue grass. I consider tame grass valuable for pasture; it is true we have plenty of prairie to herd our stock on, but we need tame pasture for early Spring and Fall.

WHEAT.

For wheat, if I sow stubble land, I plow it immediately after harvest; by so doing the rubbish will decompose and provide a fertilizer for the crop. I harrow my land at least twice, to make it compact, and keep the weeds from growing. If I sow Fall wheat, I begin the latter part of August, or the first of September, and drill about one bushel and a peck, per acre. I harvest my wheat with the Haines header, and stack well in narrow ricks. To save wheat with a header, and make a good quality, the former should be well matured and free from weeds.

If I sow Spring wheat, I prepare my land the same as for Fall, and sow as early as the land is in good condition, generally in March, but sometimes in February. When I sow on corn-stalk land, I cultivate after sowing one bushel and a half per acre, then harrow with a heavy harrow, in order to level the land. I generally succeed well in corn land.

Spring wheat has not paid me well for the last four years, the yield being light. When my land was new, my average yield was about twenty bushels per acre, but of late, fifteen bushels is a good average. Winter wheat has succeeded better of late. I intend to change my way of farming, raise more corn and less wheat, and engage more in the rearing and feeding of cattle.

The following is an estimate of cost and net proceeds, of raising ten acres of wheat, which I base on the average yield of the farm for Spring wheat; the yield of Winter wheat has been better:

Rent for ten acres of land,	$20.00
Plowing land,	10.00
Fifteen bushels of seed,	10.50
Sowing,	3.00
Harrowing,	1.50
Harvesting,	12.50
Threshing,	12.00
Marketing,	3.00
Cost of producing,	$72.50
Yield per acre, 18 bushels, ten acres, 180 bushels.	
At 70 cents per bushel,	$126.00
Net proceeds per acre, $5.35, or ten acres,	$53.50

CORN.

Corn is a sure and valuable crop, yielding a larger net profit than almost any other crop we can produce in this county. In order to produce a good crop, I plow my land well to a good depth, and harrow before planting. I mark my land three feet and a half, and plant north and south three feet nine inches. My reason for planting and laying-by north and south, is that our severe wind storms generally come from either the north or south, and if laid by the same way, a brace will be made to keep the corn from blowing down. It is also more convenient to gather, because what corn is blown down lies parallel with the rows, and is not crossed by the wagon. I

harrow twice before my corn comes up; the first time, soon after it is plowed, and the last time, when it begins to make its appearance. By so doing, I check the weeds and keep my land clean until the corn is large enough to cultivate. I cultivate corn to keep weeds from growing, not to destroy them after they have a good start. I therefore commence when the corn is small, usually cultivating four times, and the first time plowing so close that weeds have no chance at all to start. I always cultivate deep, but deepest and nearest to the corn while it is small. When I lay-by, I gauge my cultivators wide apart. Corn should be perfectly clean before it is laid by. Men that have a weedy cornfield generally plow near to the corn, and deep when laying by, which is injurious to corn, because it destroys the roots. I collect my seed corn in the Fall, when I unload my corn in the crib, and store the same where the cob can dry out. I select large, well shaped, and matured ears, and never plant a small variety of corn, because it does not yield as much as the large variety; the latter grows deeper into the soil, extends its roots out further, and consequently produces larger stalks and ears than the small. In preparing my seed I reject some from each end of the ear, but the most from the small end. By so doing I can plant with less variation, because the grains are of uniform size. I plant as early as the soil is in condition; generally beginning about the middle of April, and completing the same the first week in May. I plant on an average about three and a half grains in a hill, and from two and a half to three inches deep. As a rule, farmers do not plant early enough; early planted corn is usually the best, and some seasons one hundred per cent. better than the late. In 1873, the early part of the planting season was favorable up to the eighth of May, then it began raining, and continued wet for three weeks. I planted my corn before the wet season, and all farmers who did the same raised good crops, while those who planted after the wet season raised less than half a crop. Corn should be harvested in good season, and should not be left in the field all Winter, because the loss is generally more than would pay for the gath-

ering, and if left in the field until Spring will interfere very much with the Spring work of putting in the crop.

Estimate of cost and net proceeds for raising ten acres of corn, based upon the average yield of the farm:

If corn is planted three feet six inches by three feet nine inches, the average stand being three stalks in each hill, and there being one hundred and twenty-five ears in each bushel, the yield is seventy-four bushels per acre; for one hundred and forty ears per bushel, and three stalks per hill, sixty-six bushels; for one hundred and forty ears per bushel, two and three-quarter stalks per hill, sixty bushels; for one hundred and forty ears per bushel, two and one-half stalks per hill, fifty-five bushels.

Rent for ten acres of land, - - -	$20.00
Plowing land, - - - - - -	10.00
Harrowing previous to planting, one-half day,	1.50
Marking the land, - - - - -	1.50
Seed corn, fifty cents, planting, two dollars,	2.50
Harrowing twice after planting, - - -	3.00
Cultivating six days, - - - -	18.00
Husking and cribbing six hundred bushels of corn, - - - - - - -	18.00
Cost of raising ten acres of corn, - -	$74.50
A yield of sixty bushels per acre, 600 bushels, at the present price of ear corn, per bushel, 22 cents, - - - -	$132.00

Fifty-seven dollars and fifty cents net proceeds for ten acres, or five dollars and seventy-five cents per acre.

One hundred and twenty-five large ears make one bushel of corn, or one hundred and forty medium sized ears, but in my estimate I have taken next to the smallest yield, sixty bushels per acre. Had I taken the largest, seventy-four, the net proceeds would be much greater, but I consider sixty bushels a good average crop.

RYE.

I plow and prepare my land for rye the same as I do for

wheat or grass, sowing about the middle of August, one bushel and a half per acre. I sow early because I want it for Fall and Winter pasture. The latter pays for seed, labor, and use of land, leaving the crop of rye, which yields generally from ten to twenty bushels per acre, as clear gain. Rye makes good feed either soaked or ground.

OATS.

For oats I plow my land early in Spring, sow in March, about three bushels per acre, and harrow twice. I harvest and handle oats in the same manner as other small grain, but if cut with the header, I let it lie, in order to cure, then rake with sulky rake, and stack the same as wheat.

Oats are valuable for feeding teams, but do not pay as a market crop. During Summer, teams can stand much more work fed on oats than on corn.

HOGS.

I have found the Poland Chinas the best breed of hogs; they are adapted either to feed young or to mature and be made into large hogs. I have made them weigh on an average over three hundred pounds at one year old; and at sixteen months old over four hundred pounds. They are large, well-proportioned hogs. I think it will pay every farmer raising hogs to procure a pure, well-bred Poland China male pig, with which to keep up his stock. The Poland China and the Magie hog are the same. This breed originated in Butler and Warren counties, Ohio, over thirty years ago. Mr. A. C. Moore left Butler county, in 1853 or 1854, moving the breed of hogs with him to Fulton county, Illinois, where he has had good success in breeding and distributing them throughout this western country.

DISEASES OF THE HOG.

The disease called hog cholera is not new; it was known previous to 1850, but was not as general as now, because hogs had a wider range, not being kept in close pens as much as they now are. It has been stated, but I think erroneously,

that the diseases known at the present time have been caused by crossing the slim, long nosed hogs that we used to have with the finer breeds. When people had those slim, long-nosed hogs, they gave them more liberty than we now give ours; they allowed the hogs to run at large, to go in the timber and get such roots as the hog's system required to keep it healthy. A farmer can keep a few hogs in close confinement, by taking good care of them, giving them some slop, and feeding plenty of salt and ashes; but the more he has the more liable they are to disease.

CATTLE.

I feed my cows and calves corn all Winter, shelling it for the calves. I feed my beef cattle at two, three, and four years old, taking them from the prairie about the first of October. I feed snap corn with the husk, because it requires less work to gather, and saves hay. Farmers ought to continue improving their cattle, and send fine, heavy beeves to market. If they ship light, scrubby beeves, they come in competition with Texas cattle, and the profit on feeding is small. There are several fine herds of pure Short-Horns owned in this State. One is owned, in our county, by Mr. M. V. Easterday, of Tecumseh.

I keep my cows and calves all Summer in my blue grass pasture. I put my young cattle in the herd, bring them home about the first of October, and turn them into a good blue grass and timothy pasture, where they do well until I get my corn out; then I keep them on corn-stalks and hay, feeding corn only in stormy weather. I let them have access to my pasture all the time; cattle are not so liable to get sick from dry corn fodder, if they can get some grass all the time.

HISTORICAL AND DESCRIPTIVE.

Johnson county, situated in southeastern Nebraska, is the second county west of the Missouri river, and the second north of the Kansas line. The Great Nemaha river runs from northwest to southeast through the county, and the Atchison and Nebraska railroad along its banks. The Little Nemaha river

runs parallel with the Great Nemaha, about ten miles north of the same. These streams furnish water power for mills, which are located all along the two, being from four to ten miles apart. Their numerous tributaries thoroughly drain the country and furnish an abundance of pure water for stock. Those farms that have not running water, can get it in abundance by digging from twenty to sixty feet. I think the wells average about thirty-five feet. This country has good natural advantages, only requiring capital and labor to fully develop the same. Both the table and bottom lands along the numerous streams are fertile. The land is undulating, but not hilly, and so well drained that there is no stagnant water to poison the atmosphere. We have plenty of good limestone rock in quarries, suitable for building and walling wells, and timber is more plenty than it was at the beginning of settlements. All the streams have more or less timber along their banks, and nearly every settler has raised a grove.

The uncultivated prairies are covered in Spring and Summer with a fine coat of nutritious grasses, that afford pasture for the numerous herds of cattle, sheep and horses. Our crops of all kinds, have been good for five years in succession.

Tecumseh, is a town of about one thousand inhabitants, and is a city of considerable business importance, having five churches. Our public school system is good; we have two sections of land set apart for school purposes in every township, and a good school fund. Our climate is good, growing season long, and Winter mild; we have a few cold days, with mercury down to ten and sometimes fifteen below zero, but such weather does not last long. On the whole, our Winters are agreeable for man and beast, because they are generally dry. Spring usually opens early; we sow Spring wheat in February and March, and always plant corn by the middle of April. Our Autumns are pleasant, and Winters hardly ever set in until the middle of December. Number of inches of rainfall for four successive years: 1876, 25.95; 1877, 34.27; 1878, 27.54; 1879, 28.95.

This country, with its favorable climate, is well adapted for

all kinds of stock, especially for cattle and sheep, on account of the dry Winters, plenty of feed, and pure water. There is plenty of cheap land to be bought, raw prairie rates being from four to ten dollars, and improved from six to twenty dollars per acre.

WM. STOLLEY,

GRAND ISLAND, HALL COUNTY.

Forestry—Orchard and Vineyard—Stock—Hedges—Buildings.

I opened up a farm here, in 1857. This county, at that time, was a perfect wilderness, occupied exclusively by Indians, buffaloes, elks, antelopes and wolves. When our colony, which consisted of thirty-five persons, located here (then sixty-five miles west of the last white man's house), we had to make the first wagon trail on the then virgin prairie in the Upper Platte valley of Nebraska.

Having failed as merchant in Davenport, Iowa, in 1857, I carried with me an indebtedness of about ten thousand dollars, which I had to honestly liquidate before I could think of improving my farm, as I otherwise could have done, and these adverse circumstances are the causes which kept me from making my place a truly model farm before the present time.

I own one hundred and sixty acres of land, of which about one hundred and five acres are under good cultivation. Eighty acres of this cultivated land are usually sown and planted with field crops, in rotation as follows: One-fourth with field corn, one-fourth with wheat, one-fourth with rye or barley, and one-fourth with oats; always manuring that part of the land planted with corn.

Twenty-five acres of the cultivated land have been, in time, planted by me with forest trees, fruit trees, grape vines and small fruit. Of the fifty-five acres remaining in natural meadow-land, twenty acres are enclosed with a good fence, and serve as

a pasture for the milch cows, of which I keep about eight head at home during the Summer; and two acres about the house are sown to blue grass, timothy, and red top grasses.

My crops average: corn, from thirty-five to fifty bushels per acre; wheat, from twelve to fifteen bushels per acre; rye and barley, from twenty-five to thirty; and oats, from forty-five to sixty bushels per acre.

FORESTRY.

The first twelve acres of artificial forest, were planted by me in the year 1861, and consisted of cottonwood seedlings, one year old, and black locust seedlings, to which were added a few hundred green ash, and black walnuts, the latter raised from the nuts—where they now grow.

The trees were planted six by six feet, in rows, and received a clean but shallow cultivation for three years. The cottonwood trees yet left growing of the original and first plantation, are now from sixty-five to seventy-five feet high, and some of them measure over two feet in diameter, but nine-tenths of them have been felled by storms and worms (borers), and I had to sell them, in the shape of cordwood, at from five to six dollars per cord. But an excellent growth of hard wood trees is springing up between the pioneer trees yet left growing. The hard wood trees, mixed with some soft wood, I have planted from time to time, consisting of black walnuts, white and green ash, box elder, red cedar, white elm, soft maple, butternut, mixed with an undergrowth of black currants, wild grape, dogwood, and other brush trees.

The original black locust grove was totally destroyed by the borer in the years of 1876, '77 and '78, but the dead trees furnished fence posts and the best of fuel. A new growth of the same timber, now from ten to fifteen feet high, has sprouted from the roots, and is intermixed with same kind of hard wood and other trees as before enumerated.

The remaining ten or twelve acres of artificial and ornamental groves consist of the same hard wood varieties, with an addition in variety, of honey locust, Kentucky coffee bean,

catalpa, soft maples, American larch, Scotch pine, yellow pine (from the Rocky mountains), Norway spruce, arbor vitæ, Rocky mountain silver spruce, and a few other kinds. In all about one thousand evergreens in thrifty condition.

ORCHARD AND VINEYARD.

My orchard contains about two hundred and fifty fruit trees, of which the apple trees are planted thirty feet apart, intermixed at a distance of fifteen feet apart, with different varieties of crab apple, plum, cherry, and peach trees.

Grasshoppers destroyed my seven-acre orchard (mostly apple trees), in the year 1874; since that time I have reduced my orchard to the number stated, and have replanted only with such varieties as proved capable of withstanding the ravages of this pest.

My little vineyard now contains about eight hundred grape vines, principally Concord; the remainder being thirty-five Clinton, thirty-five Ives, thirty Hartford, twenty-five Catawba, and thirty Elvira vines. They are trained to wire trellises six and one-half feet high, of five wires. I have besides, twenty-eight choice varieties, in single vines, on trial, for the purpose of experimenting and testing them as to hardiness and adaptability for this part of the country.

My mode of cultivation, for orchard as well as for grapery, is: shallow plowing in early Spring, and a second shallow re-plowing in the latter part of June—after which all cultivation ceases. In November, I trim my grape vines (renewal system), and cover with old prairie hay as Winter protection.

SMALL FRUITS.

I have the red and white Dutch and cherry currants, and the black Naples, in a row, planted four feet apart. The gooseberries, of which I have the American Houghton and Mountain Seedling, Smith's improved, and Downing's white, are planted the same way and receive a similar cultivation to the orchard and vineyard. Of blackberries, I cultivate, for home use, the Snyder and Lawton, and of raspberries I have the Gregg, Turner, and Philadelphia now on trial, and a native Black Cap

of good quality I have fruited for years. Strawberries grow in large patches in half shaded situations of my grove.

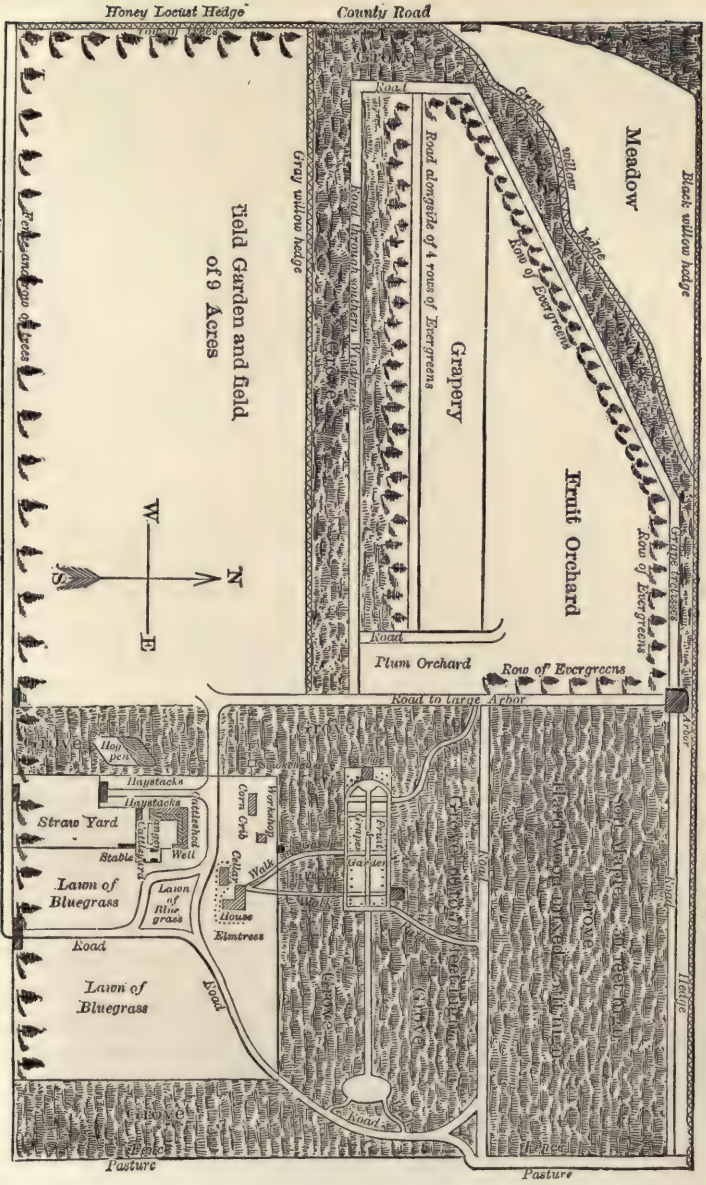
My fruit trees, planted in the year 1863, first bore the Early Richmond cherry, in 1867; the first peach in 1871, and the first apples and pears in 1872; since that time the trees gradually bear more and more. I have gathered seven bushels of crab apples from a single tree in one year. I aim to subject all my fruit trees at least once annually (in May), to a thorough wash with soft soap, from the lower limbs down to about three inches below the surface of the ground, and look carefully after the little twig borer and other injurious insects. In September I protect my young trees against rabbits and hares, by either applying a wash of blood to the tree-trunks as high up as these animals can reach, or wrapping with tar paper. My old bearing trees and vines I manure with well decomposed stable manure and wood ashes (top dressing) during late Autumn or Winter. Many varieties of forest trees as well as fruit trees, will not endure the ravages of grasshoppers, when this pest happens to make a prolonged stay with us in the month of August; but the forest trees enumerated in the foregoing have proved either entirely iron clad, or to be the least affected.

In Spring and Autumn, I sell forest and ornamental trees out of my plantation, in sizes to suit customers, as also fruit trees and other nursery stock of the kind, which so far have proved best adapted to this country, and soon I hope to be able to supply the home market with considerable fruit.

STOCK.

I keep but four horses,—for farm and orchard work exclusively.

I have seventy-two head of a good grade of common American cattle. I aim to increase my herd in numbers as much as possible, and have had for some years a nearly full-blooded Short-Horn bull running with them. I sell annually all oxen that have reached the age of three years, and occasionally, when special opportunities are offered, I sell good


Honey Locust Hedge
County Road
Meadow
Black willow hedge
Gray willow hedge
Road alongside of 4 rows of Evergreens
Grapery
Row of Evergreens
Fruit Orchard
Field Garden and field of 9 Acres
Road
Plum Orchard
Road to large Arbor
Arbor
Hop pen
Haystacks
Straw Yard
Stable
Well
Lawn of Bluegrass
Lawn of Blue grass
House
Elmtrees
Corn Crib
Workshop
Walk
Road
Hedge
Pasture
Fence
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milch cows. My stock is herded from the first of May until the first of November, at an expense of one dollar per head, when they are taken home to the farm and are allowed during the day to run at large in the cornfields and to straw-stacks. During nights they are corraled, and are either left in a large straw-yard or are taken into the shed-yard, which is supplied with a good substantial shed one hundred feet in length and twenty feet wide, and a manger fifty feet long, with a capacity of two tons of hay. Here they get all the hay they will eat at night, and are prevented from trampling the hay under foot. I feed on an average about one ton of hay per head during the Winter months, and in addition, corn or ground food to steers intended for market, as also to the milch cows.

I keep enough hogs for home supply, and only a few to spare,— about ten or twelve.

HEDGES.

Formerly my plantations were surrounded partly by a board or rail fence, the place of which, to a great extent, is now taken by live hedges of white or gray willow, that not only afford protection against trespassing stock, but also serve as windbreaks, and furnish every five years an abundance of fuel and fencing material. I am now at work to inclose my entire farm with live hedges, and the greater part of this labor is already accomplished.

BUILDINGS.

As to my buildings, they are either built of cottonwood logs and framed over with boards, or they are ordinary frames. They consist of (see plan):

a—Dwelling house, one and one-half stories high, sixteen by twenty feet, with a room attached of ten by thirteen feet, built of logs and framed over,

b—Barn, combining granary, horse-stable, and machine and buggy-shed, twenty by sixty feet, and built out of extra heavy cottonwood logs (formerly serving as a fortification against the attacks of hostile Indians), framed over with boards, the loft affording room for seven tons of hay.

c—Work-shop, a log building, fourteen by eighteen feet, with a carpenter's workbench and tools, serving also as a place to store agricultural implements.

d—Cellar, twelve by twenty feet, constructed entirely out of cedar posts (walls as well as roof), and covered with three feet of earth.

e—Cattle shed and stable combined, one hundred and forty-two by twenty feet, built of heavy cedar posts and cottonwood logs.

f—Smoke house, eight by eight feet, and nine feet high (frame).

g—Corn-crib of one thousand bushels capacity, combined with a shed for the housing of the threshing machine, sulky plow, horse cultivator, harrows, and other implements.

h—Hog-pen and sheds in rear of cattle yard, and in the shade of forest trees.

The house is supplied with a good drive-pump in the kitchen, and a good wooden pump is near the cattle yard, furnishing all the water needed for stock and horses.

Requisite outbuildings, and three large grapevine arbors in different parts of my plantation, complete the description.

M. B. STONE,

SYRACUSE, OTOE COUNTY.

Corn — Grain — Herding — Cattle — Sheep — Fruit — Climate.

My knowledge of Nebraska covers more especially the southeast portion of the State, and has been gained by a residence here of some fifteen years. The several counties with which I am acquainted (Cass, Lancaster, Johnson, and my own county, Otoe), are remarkably well adapted to the various branches of husbandry. The land is very uniform in character, so much so that it would be difficult to find a quarter section that would not make a good farm. The surface is high, rolling prairie, well watered by streams, along which are groves of native timber, elm, ash, oak, walnut and cottonwood being the most common. The soil is a rich vegetable mold, on the high lands, from one to three feet in depth, and on the bottom lands, along the streams, reaching the depth of eight to ten feet. The subsoil is of such a nature that it absorbs the moisture and holds it in reserve for growing vegetation, too far from the sur-

face to be lost by evaporation, and yet near enough to be appropriated. Thus we are enabled to endure a long season of drouth, with but slight injury to crops.

CORN.

In the Summer of 1864, we had but one rain after corn planting that amounted to more than a heavy dew. It came on the fourth of July, and soaked the ground completely. This rain made the corn crop. Fields well tilled yielded thirty-five to forty bushels per acre. In more favorable seasons we get fifty to sixty bushels on upland, and seventy to eighty on the best bottom lands.

Corn is regarded as our most profitable crop. Deep plowing, early planting, and thorough cultivation, here, as elsewhere, secure the best results. The first crop of weeds is destroyed with the harrow, and the ground pulverizing readily under this kind of cultivation, much time is saved by the use of the implement immediately after planting. One team and hand will do the raising and cribbing of sixty to seventy acres.

GRAIN.

Spring wheat, oats, barley and rye are raised to a considerable extent, and recent experiments indicate that in this region Winter wheat may also be cultivated with profit. The harvesting of small grain is mostly done with heading machines, saving much of the hard work and expense of former methods.

HERDING.

One peculiar advantage which the farming interest has here is derived from the herd and stock law. In other new countries a vast amount of capital is employed in fencing. Here, where stock is collected in herds, and guarded at small expense, this capital finds more profitable investment in cattle, sheep and hogs. There has been very little damage done to crops, under the herding system, and farming without fences, in a new country, may be pronounced a great economy, and a complete success. But as the country grows older, and the

herding range is needed for cultivation, pasture lots will be required. Hedge fences are easily grown (the Osage is best), and the farmer can well afford to take time to fence his fields in this way, accomplishing it with small expense.

CATTLE.

Cattle raising is now an important branch of husbandry here. The cost of herding in Summer does not exceed twenty cents a month per head, and in Winter they live well on prairie hay, which costs one to two dollars per ton, with a small amount of corn. Straw piles and stalk fields are also turned to good account in the Winter feeding. In addition to the stock raised here, thousands of animals are brought in each year from the South to fatten on our surplus of corn and fodder. The hogs following these cattle make cheap pork for the million.

SHEEP.

I believe there is no domestic animal that finds a more congenial home here than the sheep, and none that yields so great a profit to the farmer. The expense of keeping in Summer — pasturage costing nothing, excepting the expense of a herder — is, of course, much less than in the older settled States. The loss from disease is very slight. Six years ago a neighbor bought a flock of one hundred ewes, at two dollars per head, and the following Summer sold from them two hundred and twenty-five dollars' worth of wool, and raised one hundred and five lambs. He has thinned out his flock from time to time, by selling off some old or fat ones, and now has nine hundred, worth three dollars per head. Another Nebraska farmer commenced four years ago with a flock of one hundred inferior grades. Each Fall he has sold a sufficient number of fat muttons to meet all the cash expenses he incurred during the entire year. His sheep have averaged eight pounds of wool at a shearing. They have been herded on land belonging to speculators, or railroad companies. His herder has cost him fifteen dollars per month and board. He has always been

able to purchase hay in the stack at one dollar and a quarter per ton, and corn at fifteen cents per bushel. He has allowed each sheep to eat one and a half bushels of corn during the Winter. He has lost few sheep by disease, and none have been killed by dogs or wild animals. Last month he sold his entire flock, numbering five hundred head, at an average of two dollars and a quarter per head. His object in disposing of them was to procure money to purchase high grade Merinos, that will shear ten pounds per head. He finds sheep profitable in proportion to the number of pounds of wool they produce.

FRUIT.

Another very profitable branch of husbandry here is fruit growing. All kinds adapted to this latitude do well. Our market promises to be good for a long time to come. The immigration will, for many years, take all we can spare; and the great mountain region, with its growing mining and manufacturing interests, will be ready to pass in their baskets as soon as we have a surplus for shipping. The character of our soil and climate seems especially well suited to grape culture. An acre of vineyard in the neighborhood has yielded an average of one hundred dollars a year profit to the owner. It is of the Concord variety. The vines are trained to stakes, and have never received any covering or protection in Winter. The fruit has been sold at an average of about four and a half cents per pound. On the same farm is an orchard, which has been in successful bearing for the past eight years. The fourteenth year after setting, one Winesap tree yielded fourteen bushels, and six Rawle's Jannet trees yielded sixty-six bushels. This orchard was cultivated for the first six years, and then seeded down with timothy. A mulching of straw was also spread about the trees to the extent of the limbs.

Dr. John A. Warder, of pomological fame, in 1878, attended the Otoe County Fair, and also the State Fair at Lincoln. After examining the fruits on exhibition, and visiting many of the orchards of this part of the State, he is reported to have pronounced the fruits remarkably fine, and of greater

size and beauty than the same varieties in the older fruit sections.

PEACHES.

Nine years ago I planted an acre of ground with peach trees of one year's growth. The ground was prepared as for corn, and marked out with a four-foot marker. In every alternate cross each way, a tree was set, in all about seven hundred trees being planted. They received the same cultivation as the adjoining cornfield until the third year, when they shaded the ground and kept down the weeds. The fourth year they bore a light crop. The fifth year about three hundred bushels were gathered, and sold at one dollar and a quarter to two dollars per bushel. Perhaps I have said enough of fruit growing here to show that where proper attention is given, the best results are secured.

CLIMATE.

I must allude to our climate, or I shall not do justice to Nebraska as a farming country. To the farmer, who, as you may say, lives out of doors, it is important that he have as much sunshine and fair weather as is consistent with the growth of his crops. Comparing our climate with that of the States east of the Mississippi river, we have more sunshine, less foggy, murky, sulky weather, cooler nights through the Summer season, more high winds, a less amount of snow (having very little use for sleds), and a clear, pure, invigorating atmosphere, comparatively exempt from malarial influences. I know of no healthier climate, or one more enjoyable.

DAVID BROWN,

EVERETT, DODGE COUNTY.

Mode of Corn Growing — Wheat — Potatoes — Hogs.

My farm consists of eighty acres table-land; sixty acres are under cultivation for field crops, four acres in orchard and small fruit, eight acres in grove, and eight acres prairie grass. (See diagram.)

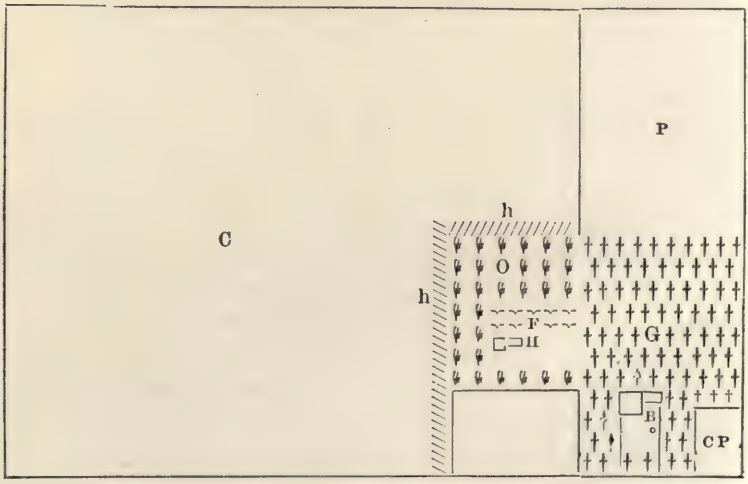


DIAGRAM OF FARM.

C—Cultivated land. h—Hedge to protect fruit trees. O—Orchard. H—House. F—Small fruit. G—Grove. B—Barn, corn crib and stable, with yard in front. C P—Calf pasture. P—Pasture land.

Corn and wheat are the crops mainly grown, with a small amount of oats. In order to keep the soil in good condition and free from weeds, I find it necessary to have two crops of

corn to one of small grain, which gives me about forty acres corn and twenty of wheat, oats, and root crops each year.

MODE OF CORN-GROWING.

I have as much of my corn ground plowed in the Fall as possible. I mark and plant about the first of May, without harrowing or interfering with the Fall plowing until planted. I follow the marks of the horse planter with a two-horse corn plow, and throw the soil as heavily as possible on the marks of the planter, then harrow crosswise before the corn has time to be up. This mode of working Fall plowing completely destroys all weeds that have started in the Spring, while the frost of the Winter has destroyed the crop of weeds started after plowing the previous Fall. I prefer this method to Spring plowing, for the ground being somewhat settled, though mellow enough for the roots of the corn to penetrate, retains the moisture better and is less lumpy, thereby forming a nicer seed bed for the grain. Corn planted on land treated as above stated, I find to mature about a week sooner than on Spring plowing. On Spring plowing I harrow, mark, plant, and harrow again before the corn is up. All corn should be cultivated four times at least, to secure a good crop, and to leave the ground in condition for small grain the following season. Average of corn crop this year, sixty bushels per acre. Cost of producing the crop:

Plowing, per acre, - - - - -	$1.25
Marking, planting, and harvesting, per acre, -	.30
Cultivating four times, per acre, - -	1.25
Husking and cribbing, per acre, - - -	1.50
Total expenses, per acre, - - -	$4.30

Making the actual expense of producing a bushel of corn only seven and one-sixth cents, leaving the farmer, at present price here, a clear gain of seven dollars and seventy cents per acre, after being paid for his labor.

WHEAT.

Fall wheat I sow in corn, cultivate with double-shovel one

way, twice between rows of corn, and harrow crosswise with a single horse attached to a single section of an iron harrow. This does good work. For Spring wheat, I remove the corn-stalks, mostly by breaking with railroad iron, then raking them into rows and burning them. I sow about one and a half to two bushels to the acre, cultivate, and harrow thoroughly. My yield of Spring wheat is about fifteen bushels per acre.

Cost of producing wheat crop, per acre:

Seed, one and three-quarter bushels, at one dollar,	$1.75
Sowing, cultivating, and harrowing,	.75
Harvesting and stacking, including board,	2.00
Threshing, four cents per bushel,	.60
Total expense, per acre,	$5.10

Making the actual expense of producing a bushel of wheat here only thirty-four cents, and leaving the farmer a profit of eight dollars per acre, at the present price of wheat.

My mode of growing oats is similar to the one described for wheat, and my yield has been forty-six bushels per acre, which gives a handsome profit at the present price—twenty-five cents per bushel.

POTATOES.

I plow deeply about the fifteenth of May, harrow the ground well, and lay out in drills, tolerably deep, and wide enough apart to be cultivated with a two-horse corn plow. I drop the sets about ten inches apart, and cover with the two-horse cultivator, having the shovels well set in to throw the dirt heavily on the furrow. This covers the seeds with loose earth without displacing or tramping them in the furrow, as when covered by a single horse. My yield has been about two hundred bushels per acre, mostly Peachblows. I find no trouble with potato bugs, and have not needed to use any preventives, or to hand-pick since coming here, an experience of seven years. These pests will be found wherever the potatoes are planted early. But potatoes planted here after the twentieth of May, in quantity not less than an acre, and

not too near town where there are abundant patches of early planting, will not be troubled with potato bugs.

My grove of eight acres is now eight years planted, and is still improving, though for the past two years we have used no other fuel. It is composed of cottonwood, maple, and box elder.

Fruits of the usual varieties do well here, such as apples, peaches, cherries, grapes, gooseberries, currants, blackberries, raspberries, etc. All these bear well, and mildew on gooseberries is unknown.

HOGS.

I have found hog breeding quite profitable after the following method. I take only hogs of good stock. Those bred from Poland China sows crossed with a Berkshire boar, I prefer for quick growth and early maturing. They feed well, keep fat from their youth, and are ready for market at ten months, at a weight of about two hundred and fifty to three hundred pounds. I prefer feeding boiled feed. It costs too much to grind, but boiling can be done at a nominal cost. For a boiler I make sides of plank two and one-half feet deep, ends from top downwards two feet deep, round the corners of the sides up to these ends, and nail on sheet iron bottom, letting the iron extend well up the ends. The bottom requires to be well nailed on, and the box or frame well matched, so as not to leak. A box of that shape and three feet wide, will boil twelve bushels, and this set on brick, with a chimney about three feet high, will work well. I use straw for fuel, and have a sheet iron feeder, fitting the front of the furnace, to shove the straw through. A few armsful of straw will boil my feed in thirty minutes, when it is left to soak for one day thereafter. I find that in using boiled feed for hogs, I can produce a pound of pork for every five pounds of corn. The month previous to selling, I gradually change to hard corn, to harden the hogs for shipping, and prevent shrinkage. In these days of hog disease, it is necessary to use a preventive, as well as a tonic, especially when our hogs are confined almost their entire life, and fed on grain. I use the following, and give it for what it

is worth. I put half a bushel of unslacked lime in a barrel, having ready half a bushel of salt, in which are mixed four pounds of sulphur and half a bushel of pulverized charcoal. I wet the lime sufficiently to slack it, and as soon as it begins to steam, spread over it the salt and sulphur, over the top of that the charcoal, and then cover the barrel with a heavy cloth. When the lime has slacked and partly cooled, I stir all thoroughly together. This I find to be both an excellent tonic and disinfectant. Dose, about one tablespoonful to the hog two or three times a week.

I find the important points, to secure success in farming, are thorough cultivation, good seed, and the best stock. To keep the land rich and the stock well fed (with economy), will almost invariably insure success.

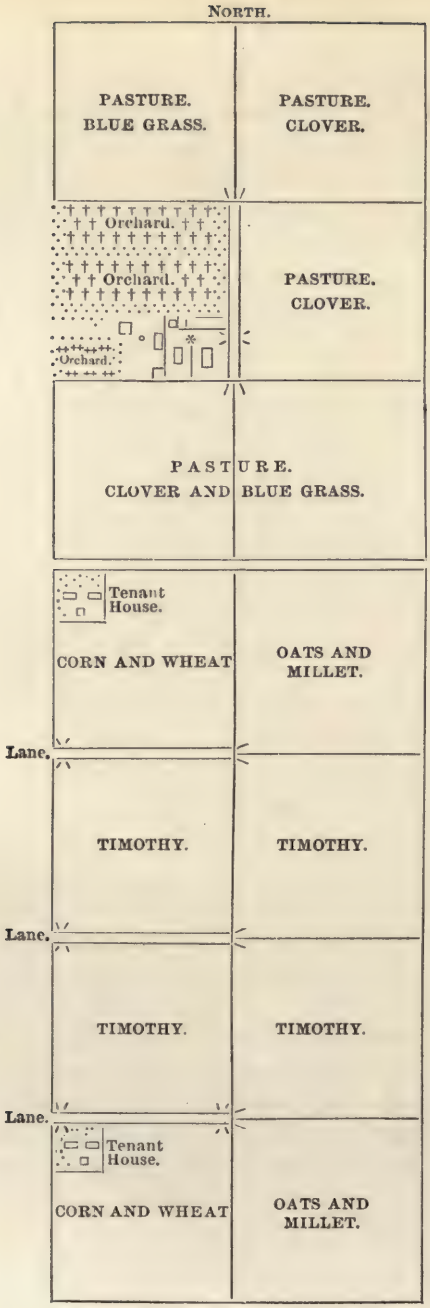
To those desiring a farm home I would say, we have a beautiful climate, a mild Winter, with very little snow, sufficient rain in Summer to produce good crops, a rich soil overlying a porous subsoil, good water, and an abundance of grass, unsurpassed probably by any other State. The tame grasses and clover grow very well here.

N. R. PERSINGER,

CENTRAL CITY, MERRICK COUNTY.

A Stock and Fruit Farm — Cattle — Buildings — Model Racks — Feeding — Profits.

My farm consists of five hundred and forty acres, lying in sections six and seven, township fourteen, north range six, west, Merrick county, Nebraska. July 21, 1871, I filed a soldier's homestead on the south half of the northwest quarter, and north half of the southwest quarter of section six, and that Fall built me a sod house, with board roof. The next Summer I had sod broken, some twenty-five acres, and in 1873 planted about one acre of forest trees. I did not improve my



PLAN OF N. R. PERSINGER'S FARM.

farm otherwise than cultivate and plant trees, until 1877; that year I purchased from my brother the one hundred and sixty acres lying south of me. This gave a half section of land, with ninety acres under cultivation, and seven acres of timber planted. In the Fall of 1877, I built me a plain farm house, sixteen by twenty-six feet, one and a half stories high, the only house on the farm prior to that time being a small board house twelve by sixteen feet. In the Spring of 1878, I began to plan my farm for a stock farm; also planned to plant three orchards. My object in having three orchards was to have different exposures, one southern, one northern, and one to be entirely surrounded by forest trees, as shown on the ground plan herewith, hoping thus to have fruit every year. So far, I have planted only one hundred and twenty-five trees, taking care to select only such fruits as have been found adapted to this climate. I have arranged my orchards to contain about three hundred trees each.

CATTLE.

In the Fall of 1878, I bought the south half of the northwest quarter and the southwest quarter of section 8, making up my five hundred and forty acres. In my arrangements for a stock farm I have but made a start. I have purchased and placed upon the farm eighty-five head of cattle, the most of them graded from one-half to three-fourths Short-Horn; and from the John Wentworth herd at Summit farm, Chicago, I obtained a thorough-bred Short-Horn bull, to run with the herd, it being my intention to buy another the coming Spring.

I prefer the Short-Horn Durham stock, believing, as I do, that for general purposes this is the best stock, producing more and quicker returns than any other. It is my intention to run my stock into full blood Short-Horns as quickly as possible. My first work for the cattle was to build a corral, and then fence in a pasture of one hundred and twenty acres, with barbed wire.

BUILDINGS.

My next work, during the Summer and Fall of 1879,

was to build a barn, twenty-four feet by thirty-two feet, with twelve feet posts, for my horses and bulls and milch cows. For the protection of my other cattle, I built a shed, twenty-eight feet wide and ninety-six feet long, boarded with common boards and covered with shingles, and divided into two parts, with yards to each part; one, twenty-eight by forty feet for my calves, the other, twenty-eight by fifty-six feet for grown cattle. In the line of fence dividing the two cattle yards, I have put up a Halliday windmill pump, with a trough sixteen feet long, in each yard, and so arranged that I can keep the troughs always full of clear, pure, fresh water. I believe that if I had a stream of water running through my farm, I should keep my cattle away from it, and use a windmill pump to supply them with pure, clean, cool, fresh water. In these yards I have racks or bins to feed hay from, made by setting cedar posts solidly in the ground every six feet, and to these spiking and bolting two by six timbers, twenty-eight inches from the ground, then boarding tight from there to the ground, making in reality, a box twenty-eight inches deep. Two feet above these two by six pieces, I bolt another two by six timber to the posts, to prevent the cattle getting into the feed bin or rack, but allowing them to run their heads in and eat without wasting. This rack is eight feet wide and one hundred feet long in each yard, and needs filling up with hay about once in three days. My sheds are intended only for shelter from storms and cold, and to sleep in, but are made so that in case of a protracted storm they can be fed in them. In these sheds I have small boxes of salt, so placed that cattle can go to them at will and lick.

My corral is so arranged that cattle are let run from it into the pasture, and during the hot days in Summer the gate is left open, so that they can have access to the water at will.

FEEDING.

I do not aim to feed my cattle other than hay, except in cold and stormy weather, except my bulls, calves and milch cows. These I always keep well fed, using chopped feed of

barley, oats and corn, with an occasional feed of millet. Millet I also feed to all of my cattle once a week.

PROFITS.

In regard to profit, during the last two years—1878 and '79—my net earnings from my cattle have averaged over twenty per cent. per annum, and as I am now prepared, I think the next two years will net me thirty per cent. per annum. This I consider a good investment.

It is my intention as quickly as possible to seed my land to blue grass and clover for pasture, sowing timothy for hay, and fence the farm into forty acre tracts. It is an established fact that these three crops of grasses do well here. My intention is to rotate crops and alternate pasture.

I can assure any one who has vim, energy and character, that just as good openings can be made upon almost any land in Nebraska. Having resided in thirteen different States, I think I am able to form an unbiased opinion, and I do conscientiously say, that in no place have I found so many advantages and so few disadvantages as here in Nebraska. My advice to all who seek a home is, Come and see, and be convinced.

ROBERT W. FURNAS,

BROWNSVILLE, NEMAHA COUNTY.

A Fruit Farm—Old and New—The Orchard—Plums—Pears—Apricots—Grapes—Berries—Marketing.

FURNAS EVERGREEN HOME FRUIT FARM.

My experience with fruit growing in Nebraska commenced in the Spring of 1856, and then, with many misgivings and doubts, I confess, for we had known the region west of the Missouri river as the great American desert. Success from the first was gratifying, and my expectations more than gratified in the end.

My location is in Nemaha county, directly on the west bank of the Missouri river, thirty miles north of the Nebraska and Kansas State line. The elevation is a fraction over one thousand feet above the sea level, on high, upland, open prairie. We, doubtless, have an advantageous climatic influence from the large water course, and abundance of native timber adjacent. Here we raise apples, pears, peaches, plums, prunes, cherries, apricots, nectarines, grapes, and all the other small fruits.

My first fruit farm consisted of sixty acres, planted with the varieties of fruits named. To this I added one hundred acres in apples, peaches and apricots in the Spring of 1875. This planting of 1875, was entirely destroyed by grasshoppers that year, together with over three hundred thousand other trees and vines, nursery stock, not a tree left of the hundred acre orchard, those transplanted that Spring seeming to have preference with 'hopper appetites. This was the only grasshopper visitation of the region in my residence of twenty-four years in Nebraska.

That farm I sold in 1876, and in the Spring of 1878, planted me a new fruit farm of forty acres, which I am pleased, for personal reasons, to call "Furnas Evergreen Home Fruit Farm." In putting out this farm, I have endeavored to avail myself of the experience and observation of my twenty-four years residence, especially in the region in which I am located. The ground, as in my old orchard, is high, upland, open prairie, in fact adjoins the old farm. The exposure is slightly to the west and north, but all nearly level. The lay of this land is about as I would like it, well drained, inclining to the points of the compass indicated.

The entire tract is surrounded with hedge fence. On the north line Osage, west line honey locust, south and east willows. Twenty feet from hedge line, inside, I have a row of evergreens, Scotch, Austrian, and white pines on three sides and European larch on the other, planted twenty and twelve feet apart, corresponding with fruit tree orchard rows adjoining. Twenty feet inside this I have my orchard, in blocks of

varieties, consisting of apples, peach, pear, plum, prune, cherry, nectarine, apricot and quince, with blackberries, raspberries, strawberries, currants and gooseberries between trees.

THE ORCHARD.

The apples I planted twenty feet apart. The varieties, Ben Davis, Winesap, Rawle's Jannet, Jonathan, Red June, Red Astrachan, Maiden's Blush, Bailey's Sweet, Tallman's Sweeting, Starch, Wolbridge, with a few other varieties for Autumn purposes. Nine-tenths are of the four first named varieties, in the order named, for profit. Cherries, eighteen feet apart. The varieties, Early and Late Richmond principally, with a few each of Belle Magnifique, Elton, Royal Duke, and May Duke. Peaches, twelve feet apart. I am aware this is close. My theory, however, is to head-back each year, at least one-half the current year's growth. Commence with the tree at one year on this plan, and it can be kept up. In my opinion, it is the true theory of peach culture. By it the tree is made to mature its wood more perfectly, comes into bearing earlier, produces larger and better fruit, more pounds, and brings more dollars than when permitted to grow at pleasure. The varieties I have found most reliable and profitable are Hale's, North's, and Crawford's Early, followed with Crawford's Late, Stump the World, Heath Cling, and Solway. I have a very fine collection of native seedlings, obtained after years experience, which are equal in all respects to any of the varieties named. I have the late new and earlier varieties, not yet fruited: Alexander, Amsden, Downing, Murren, Foster, Gov. Garland, Beatrice, and Louise.

Plum, pear, apricot, quince, prune, nectarine, all planted same distance apart as peaches. Shall prune liberally to keep within due bounds.

PLUMS.

The only varieties of plums I have found profitable are Green and Imperial Gage, and Wild Goose. Have occasionally had good crops of Coe's Golden Drip and M'Laughlin. These are the principal varieties planted in my new orchard.

My old plum orchard was inclosed with picket fence, inside which chickens were kept, especially hens with broods, until plum season was over. This precaution, and smoking trees with coal tar, always secured fruit when there was a plum season. I have had admirable success with German prunes. The only difficulty was that too much fruit set, which if not thinned out would rot on the trees.

PEARS.

While most people have been discouraged with pear culture, I have had no reason to be, and attribute my success to treatment of soil and tree, with, of course, regard for varieties cultivated. I keep the ground clean as a garden bed, constantly and liberally top dressed with ashes, lime, and all the old iron scraps and tin cans pounded up I can obtain. I never allow rampant limbs to run wild in growth. I pinch off and head back at all times, beginning an early government of all trees and vines, and more particularly the pear. The old adage we were taught when boys, "Just as the twig is bent, the tree's inclined," meant something then; more now, because there are more twigs to bend. The varieties found most desirable with me are Bartlett, Howell, St. Lawrence, Lone Ben, Seckel, Beurré d'Anjou, Beurré Diel, Clapp's Favorite, Doyenné d'Eté, Vicar, Bloodgood, Buffum, Duchesse d' Angoulême. Both on the old and new farms I planted largely of dwarf trees, which are great pets with me, showing appreciation of kind treatment more, I think, than any other fruit tree grown.

APRICOTS.

When we have plums, we have apricots. I have produced some as fine specimens as one could desire to see or taste. Breda and Moorpark are reliable and profitable, always bringing good prices — four to six dollars per bushel. When picked just before full color, they bear shipping well.

GRAPES.

Grapes I plant six feet, in rows running north and south, rows eight feet apart. Train to wire, then on posts sixteen

feet apart. Prune closely as soon as leaves drop in Fall, and pinch back during Summer, after fruit is formed, and until after picked. Leading varieties, hardy and reliable here, Concord, Hartford, Ives, Delaware. There is no trouble with most varieties of grapes in this locality. Catawba and Isabella require more severe pruning and pinching to secure good clusters and berries than any other. The Norden is a promising grape with us. The white, or green varieties, Martha, Lady Elvira, and Goethe, give good crops, and bring good prices. Everybody grows Concord, and hence prices of this variety are often very low.

BERRIES.

I have planted blackberries, raspberries, currants, and gooseberries, one plant midway between fruit trees, twelve feet apart, and the plants each four feet apart between apple and cherry trees. Blackberries and raspberries are kept trained to stakes. These, with currants and gooseberries, are kept deeply mulched at all times. Strawberries I also cultivate between fruit tree rows, allowing to grow in matted rows two feet wide, also mulched.

Wilson's Early blackberry I have found most profitable. The Snyder does well, but is not so good a berry, nor does it bring so good a price. Kittatinny and Lawton often give fair crops.

Our native wild Black Cap raspberry is a most excellent variety, improves with cultivation, and taken all in all, is the most desirable we cultivate. The Gregg and Thuack give satisfaction. The same may be said of Seneca, Turner, Miami, Clarke, Philadelphia. I have all these varieties. This season I have planted, in addition, Pride of the Market, Hudson, and Cuthbert.

Wilson's Albany is the Old Reliable strawberry, after all. I have growing, and have fruited, Crescent, Forest Rose, Downing, Capt. Jack, Colfax, Green Prolific, Monarch of the West, and many other new and modern varieties. All strawberries, with me, are good. The boy, you will remember,

when asked what he thought of strawberries, replied, "God might have made better fruit, but He *never did*." I am inclined to agree with the boy in my estimation of strawberries.

I am experimenting with Japan persimmons. The tree has gone through one Winter with simply heavy mulch about the roots. That is all I can say of or for it at present.

MARKETING.

In handling fruits of all kinds, I am particular to allow none but select specimens to go to market. All inferior is dried or worked up into vinegar. Thus one always gets good prices and a good name, which the good Book says, "is better than great riches." I often sell select peaches in baskets, at from two to four dollars per bushel, while same varieties, good, bad, large, small and indifferent, all mixed up pell mell in a box, or wagon bed, sell for fifty cents. My grapes will always command from two to three cents per pound more than a jumbled up lot.

On general principles, I want neither weeds nor grass with my fruit trees or vines. Clean cultivation and well fed soil, is my theory. By well fed soil I mean the same treatment we give ourselves, our cattle, horses, swine, sheep, etc., etc. Keep up the properties that give health, growth and production, and with the same regularity and care. Give back to the soil, each year, as much at least, as you take from it. This, in short, is my theory of cultivating and caring for fruit.

E. S. PHELPS,

AURORA, HAMILTON COUNTY.

Stock Farm — Drainage — Fencing — A Comfortable House — Stock Raising — Poultry — Wheat on New Land — Prairie Land — Plenty of Water.

A STOCK FARM.

I came to this section in February, 1879, from Bureau county, Illinois, where I had a fruit farm, which I sold, as I desired a stock farm. I bought eighty acres on the east half, southeast quarter of section twelve, town of Aurora. I took the west eighty of the same quarter as a timber claim, then purchased the northeast quarter, section thirteen, of the Union Pacific railroad, thus giving me a half section of good, rolling land. Beaver creek runs across section twelve, thus affording me water for my stock, while the grass is several weeks earlier in the Spring, and lasts much longer in the Fall than on high land. As stock raising was my main desire, this creek was quite an object.

FENCES.

I have enclosed a pasture of about sixty acres, taking in the creek and its banks, with ravines, using red cedar posts, costing fifteen cents at Grand Island, and two wires of the American Barb wire, with a smooth wire between. The cost of the pasture fence, besides labor, was about one hundred and sixty dollars. On the northeast of section twelve I have laid off about four acres for orchard, running forty rods south, with a double row of forest trees on the west; rows eight feet apart, and trees nearly eight feet in the rows; trees half way between in the row for windbreak. Willows are on the north and east lines. South of this, ten rods back from the road—as every section line here is a road—is my house, eighteen by twenty-

four feet. The basement has a kitchen, buttery and bedroom. Above is a sitting room and two bedrooms.

From the creek the land rises to the first table land, which I usually reserve for hay, the grass growing heavy, even four tons per acre. From this it rises both south and northeast. The northeast quarter of my land slopes to the south and west. The railroad quarter stands to the north, toward the creek.

DRAINAGE.

Very little drainage is needed here, as the soil is so porous that all water is soon drawn into the ground, and only where there are lagoons or alkali lands is it wet. The buffalo wallows are of the last kind, and are scattered, in small places, over most of the country, but cultivation makes these all right in a few years.

I believe it will be hard to find land that is easier cultivated, and will yield better crops. Of course some crops will not do as well here as in other localities, but common crops do well. The climate is clear and dry, and the nights almost invariably cool, so that one can sleep well.

STOCK RAISING.

Stock raising is my main idea, as fast as I can get to it. I brought from Illinois a red, blood Durham bull, two three-quarter blood cows, and three heifers, with one Ayreshire heifer, also one half blood Norman mare that has a colt from a Norman horse, and three other work horses. I brought five Cotswold ewes, and four Poland sows. This constituted my stock to start from. I intend increasing my flock of sheep by buying some more soon. Sheep have done well this season, and sheep raisers say they pay the best of any stock.

POULTRY.

In the poultry line I raise only White Dorkings. This breed I have had for over thirty years, and have yet to see any breed that I like better as a table fowl, their flesh being rich and juicy, and they are also fair layers. I have also the white and spotted—not speckled—Guineas. Guineas are great de-

stroyers of bugs, etc.; much more useful in this respect than common fowls. They are great layers, and their flesh is number one as a table fowl.

FARM IMPLEMENTS.

I brought with me a McCormick Advance reaper, Quincy corn planter with Haworth's check rower, LaSalle plows, both old ground and breaking. I consider them number one. A Joliet corn sheller, power, and an O'Brien Bros. vibrating harrow, with Black Hawk and LaSalle corn cultivators, complete my stock of implements.

BREAKING SOD.

On the railroad quarter I broke forty acres last year. I put in thirty-two acres of it in wheat that averaged about ten bushels. I plowed deeper and put in eight acres of corn that have done fairly, probably thirty-five bushels per acre. I have now broken on the railroad land about one hundred and ten acres, and on the other about fifty acres. I expect to sow seventy acres of Spring wheat, and plant eighty acres of corn.

THE GARDEN.

My garden is large, as I raise many kinds of garden vegetables. I never saw such carrots as grew here last year; beets and onions did well, also salsify. Tomatoes and cabbages I raised equal to Illinois. Peas, the Jack rabbits would eat up nights and I did not have as many as I planted. Beans did not do well; were rather a failure. My sweet corn was number one. Turnips were nice and large. My melons very fine. Winter squashes are not dry this year, as they generally are here, but appear immature.

FRUIT TREES.

On this farm I found twenty-four apple trees, about one hundred plum trees, wild ones, that were transplanted. There are also four plum groves on my creek, and I have at least six or eight distinct varieties, yellow, purple, etc. Some of them are very nice. I found a few grape vines, said to be Concords, and on the creek some wild ones, which bore grapes as large as the Clintons. I re-set the apple trees, as they

were in a disordered state, and put the rows thirty-four and a half feet apart, and thirty-four and a half feet in the rows. My experience is that fruit trees crowded do not yield such good fruit as those that the sun can shine well among.

SOIL.

My land is all prairie, mostly a gentle, rolling plain. The land is rich. The clay, or subsoil, is full of lime, called by some calcine. Vegetation on this, when mixed with the black, upper soil, grows very rank.

The eighty acres I bought on section twelve, was a homestead. The man I bought of was no farmer, and consequently the land that was broken, forty acres, was in very poor condition, full of weeds. I can not give the cost of the crops raised this year. I have twenty-five acres of corn that will average fifty bushels. I measured some that went over sixty bushels. Oats were injured by the rain in harvest and considerably damaged, so I lost many of them, and can not tell what the yield was.

There is probably as little waste land in Hamilton as can be found in any county in the State. The Platte forms the northwest boundary of the county, having the towns Central City, Chapman, and Grand Island across the river on the Union Pacific railroad, each about twenty-two miles from Aurora. Blue river runs near the south line of the county, and has two branches, on which are mills. Beaver creek is south of Aurora, running into York, and Lincoln creek is on the north of the town, which is on the dividing ridge. Both of these creeks are dry, except in places, most of the year. There are ponds in them that furnish stock water. In places on the creeks are some timber and plum thickets. I think I can safely say this is a desirable country for poor people to start farms. Water can be found anywhere by going to the level of the Platte, from twenty to two hundred feet. Nearly all the wells are bored and curbed, costing about twenty-five cents per foot.

S. G. SCHOONOVER,

CARLETON, THAYER COUNTY.

Soil of the County — Building Stone — Implements Used — Wheat Raising — Fruits — Timber.

The soil of this county is deep, black, rich, and mellow. There is plenty of building stone in the quarries, but none on the surface. The water is clear and soft. All kinds of crops grow luxuriantly. The seasons of 1877, 1878, and 1879, were rather wet. The surface of the country is rolling prairie.

SOIL EXHAUSTLESS.

The soil can never be exhausted until every hill and valley which composes it is washed away.

MACHINERY.

I use the following farming implements: The John Deere breaking plow, which I have used for ten years with good success; a Wood's mower, Bufort & Warren gang and sulky plows, Furst & Bradley walking corn plow, Furst & Bradley sulky rake, a McCormick reaper, and a Turner header, with which I cut most of my grain. I cut from fifteen to twenty acres a day, and put it in the stack. It employs five teams and seven hands. I keep my farming implements under shelter when not in use. I find, by actual test, that they will last four times as long by taking this care; and I also make it a rule to repair them at once whenever they require.

COST OF CROPS.

It costs from sixty to seventy-five cents per bushel to raise wheat, corn from ten to fifteen cents; oats from ten to twelve and a half cents; barley from twenty-five to thirty-five

cents. I convert most of my corn into pork and beef. I use nearly exclusively the prairie grass for pasture.

FRUIT.

Apples do well here; that is, some kinds, such as Ben Davis, Winesap, Dominie, Willow Twig, Red June, Early Harvest, and Red Astrachan. All these have done well with me, and I think there are still a few other kinds that will thrive here. Peaches do very well here, both the budded and seedlings. I think seedlings are the hardiest. It has not been cold enough here for the past ten years to kill all the peach buds.

Some cherries do very well. There are four kinds, the Early Richmond, Late Richmond, Late Kent, and Morello, that produce well. I have raised this fruit nine years, and never missed a crop. The cherries are worth fifteen cents per quart.

Plums average well. Indeed, this climate appears to be the natural home of the plum. Pears do not yield very well with me, neither do apricots nor quinces.

SMALL FRUIT.

Blackberries prove profitable. Wilson's Early does well. I have not failed to raise a crop for the last three years. Gooseberries are adapted to the climate, bearing every year.

Raspberries of every kind do well, as does the grape; that is, the Concord thrives remarkably. Strawberries yield well.

TIMBER.

The great objection urged against this country is that it is prairie. We can have timber if we will plant trees. I planted cottonwood sprouts about one and a half feet high six years ago. I now have trees forty feet high, four to five inches at the base. I planted them in rows four feet apart each way. This Winter I cut out one row and left one. I have planted box elders, soft maple, black walnut, ash, coffee nut, evergreens, balsam firs, red cedar, Scotch pine, Norway spruce, and white pine.

W. C. SMITH,

WACO, YORK COUNTY.

Two Good Creeks — Stock — Wheat Raising — Corn — Berkshires and Poland China — Timber Culture.

NATURAL ADVANTAGES.

There are two creeks which run through our county from east to west — Lincoln creek and Beaver creek. On these streams we have four flour mills.

STOCK.

All kinds of stock do well here. We have abundance of pasture lands, and as corn produces in abundance, stock thrives.

HEALTH.

Many invalids come here from the East, and improve rapidly in health, as we have a pure, dry atmosphere.

WHEAT RAISING.

Wheat raising is one of the leading features of Nebraska. I do my plowing in the Fall for wheat, at an expense of one dollar per acre. It is a great benefit to the ground to freeze and pulverize it through the Winter, and thus have it fully ready for early seeding in the Spring. I find that Spring wheat can not be sown too early in the Spring. It should be done soon after the middle of February, or as soon as the ground will admit of working. I use the best seed, and clean it well with the fanning mill.

I sow from one to two bushels per acre. Red Chaff and Tea wheat are the old stand-bys, yet there are many new varieties which do well. I use a good broadcast seeder, harrow the ground after the seeder, then cross harrow the same, which leaves the ground in a good smooth condition for harvesting, at an expense of fifty cents per acre.

Barley and oats do better on Spring plowing and are put

in the same as wheat, and at the same cost. I recommend rolling after the grain gets about three or four inches high, for it packs the soil around and helps the roots.

HARVESTING.

I harvest about the middle of July, which is not the labor it formerly was, as two men with a good improved self-binding harvester will cut and shock from ten to fifteen acres per day. This will cost about one and one-fourth dollars per acre. The expense of stacking, threshing and marketing amount to two dollars per acre, which gives me a total cost of four dollars and seventy-five cents per acre, without estimating the seed. My yield, for the last eight years, has been about eighteen bushels to the acre.

CORN.

I commence plowing for corn as soon as the small grain is all sown. I find I can do this for one dollar per acre. I then harrow the ground thoroughly, so as to have it good and smooth for marking and planting, which I do with a two-horse planter, at an expense of about one dollar per acre. I harrow as soon as planted, and when the corn is about three inches high, I begin cultivating the same with a two-horse cultivator, and work it through twice each way. It is then ready to lay by, and has cost about eighty-five cents per acre. Gathering and cribbing cost one and one-quarter dollars per acre more, which makes a total outlay of four dollars and five cents an acre. Fifty bushels per acre has been the average yield for the past eight years. About half of the corn I raise I ship to Eastern markets, the remainder I turn into pork.

HOGS.

The breeds I raise are the Berkshire and the Poland China. Both are generally ready for market at any time after they are six months old, if they have received care and attention. They are very hardy and not liable to disease of any kind.

TIMBER CULTURE.

I find the best method of stocking our prairies with timber

is to prepare the soil precisely as if I were going to raise a large crop of corn. The quickest way to raise a grove is with cuttings or small sprouts of cottonwood or willow. I plow, drag and mark the same as for corn, four feet each way, which will give two thousand, seven hundred and twenty-two hills to the acre. I then plant one-half to trees, four feet one way and eight feet the other, making one thousand, eight hundred and sixty-one trees; and the other half I plant in corn for two years, so as to pay for cultivation. This method affords them all the cultivation needed. I adopt the same plan in planting acorns, hickory nuts, white and black walnut, soft maple, elm and ash, where the sprouts are one year old. White pine, arbor vitæ, red cedar, European and American larch, when large enough to transplant, require more cultivation. I estimate the cost of preparing an acre and setting the cuttings of soft maple or ash, at three dollars per acre. I can plant two and one-half acres per day. This is all their cost for ten years. I have some cottonwood trees six years old which will measure six and seven inches through, and they are from sixteen to twenty feet high.

CLAUDIUS JONES,

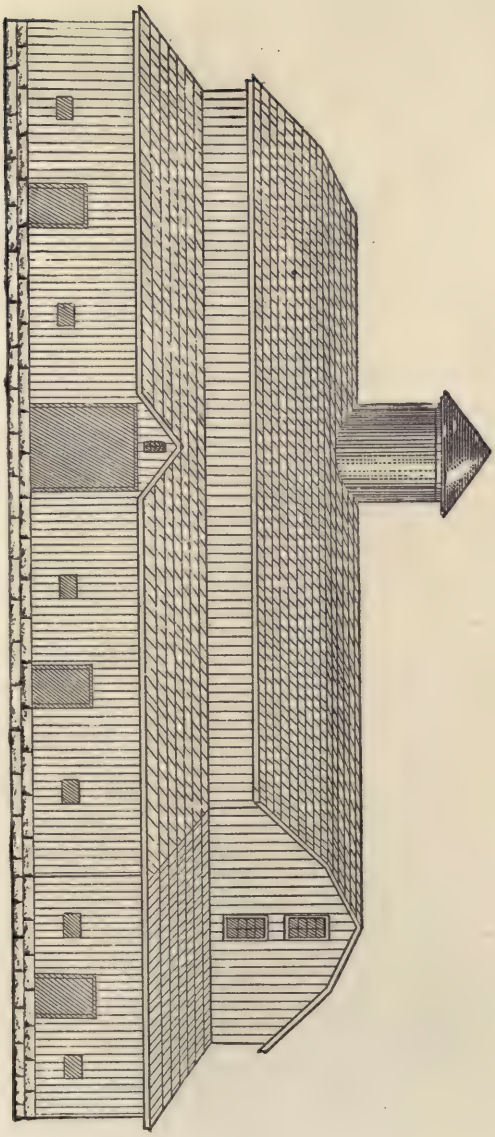
SEWARD, SEWARD COUNTY.

A Model Barn — Its Accommodations.

A MODEL BARN.

My farm consists of six hundred and forty acres, situated one mile from town. My main building is forty by eighty feet in dimensions, with twenty-foot posts, the whole surmounted by a gambrel roof. A shed, twelve feet wide, surrounds it entirely.

I built the mows so that they have capacity for holding two hundred tons of hay. I have two hundred and sixty-four



BARN AND STABLE OF CLAUDIUS JONES.

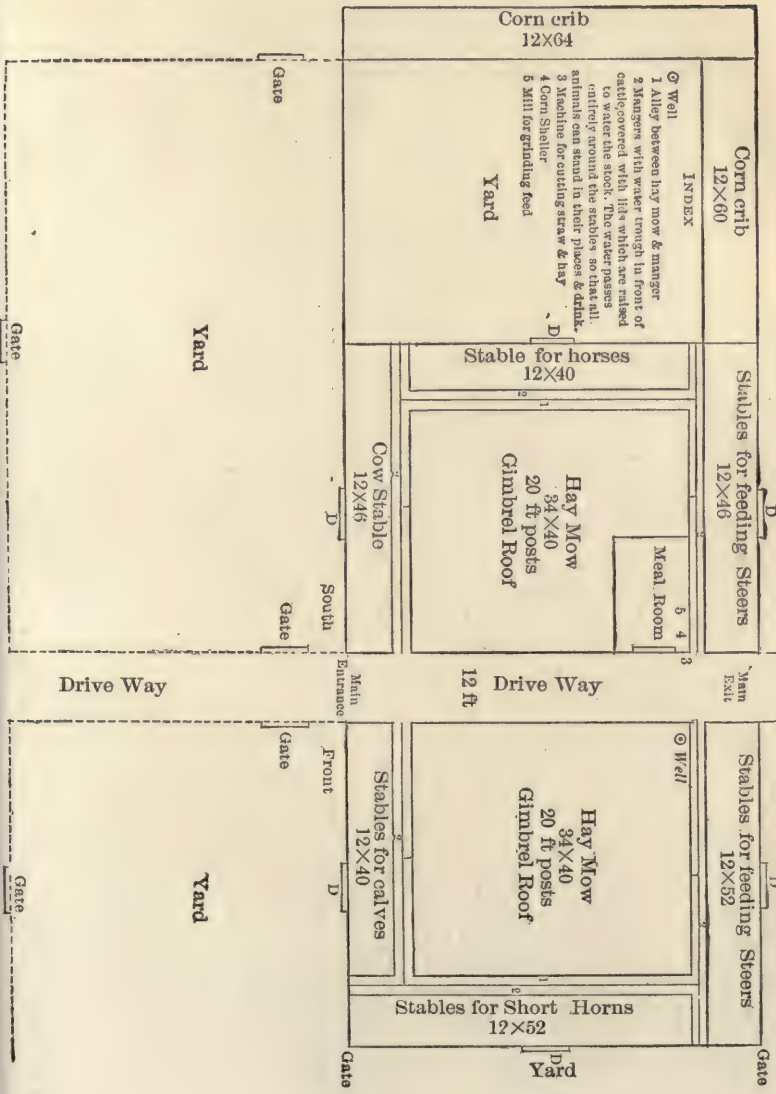
feet of stabling, twelve feet wide. Between the mows and mangers an alley runs. My mangers have a water trough running their entire length, as indicated by the dark line in the diagram. Enclosed in a cupola on the center of the ridge of the barn, is a wind engine. This cupola is twelve by twelve feet. The engine pumps the water required for the stock, cuts the straw, that is, drives the straw cutter, and works the mill that grinds the feed used. I can slip the belt from one to the other, as required.

I also have a horse pitch fork, which is so arranged that it takes but five minutes' time to unload a load of hay.

CATTLE STALLS.

I set the stalls for fattening cattle three feet apart, and for smaller animals, but two feet, six inches apart. A corn crib connects with them, and the entire yard is surrounded by yards.

As the barn rests on a stone foundation two and a half feet high, it makes a very substantial building. I have sought to make this barn as comfortable and convenient as it is possible to render it. I have over five hundred cattle, which bring me handsome returns.


Corn crib
12×64
Corn crib
12×60
INDEX
⊙ Well
1 Alley between hay mow & manger
2 Mangers with water trough in front of cattle covered with lids which are raised to water the stock. The water passes entirely around the stables, so that all animals can stand in their places & drink.
3 Machine for cutting straw & hay
4 Corn Sheller
5 Mill for grinding feed
Yard
Stable for horses
12×40
Stables for feeding Steers
12×46
Meal Room
Hay Mow
34×40
20 ft posts
Gimbrel Roof
Cow Stable
12×46
South
Main Entrance
Main Exit
Drive Way
12 ft
Drive Way
Gate
Yard
Gate
Gate
Gate
Gate
Gate
Yard
Gate
Gate
Yard
Stables for feeding Steers
12×52
⊙ Well
Hay Mow
34×40
20 ft posts
Gimbrel Roof
Stables for calves
12×40
Front
Stables for Short Horns
12×52
Yard
Gate

H. RICE,

ALBION, BOONE COUNTY.

A Land of Promise — Wheat Land — Plows Early — Cuts His Grain Before Quite Ripe — Experience — Forest Culture.

NEBRASKA ONCE A WASTE.

We are in that belt of the United States that at one time was considered a land of waste, a desert, uninhabited, and abounding in rolling waves of prairie, which were worthless and could never be utilized for the purposes of the white man, — created only for the red man of the prairie. Nebraska is about equally divided as to the situation of her soil. Between her streams and rivers are belts of rolling prairie, which are susceptible of maintaining a vast population on the cereals, and of sustaining immense herds of cattle and sheep. The rolling prairies have no timber, save what has been planted by the sturdy pioneer. Along the rivers and streams, which are very numerous, may be found belts of the cottonwood, box elder, and maple; also white elm. These are the chief woods, which thrive and grow for fuel and farm use in a few years after being planted out.

THE SOIL.

The soil all over the State is about the same, consisting of a black calcareous loam, impregnated with an abundance of decayed vegetable matter, composed of those chemicals and elements which are essential to the successful raising of grain and grasses. In depth the soil is from three to six feet, with a subsoil of a whitish clay, and sometimes of a blue clay.

SOIL INEXHAUSTIBLE.

My experience, from farming more or less for the past fifteen years in the State, is that the land can not easily be

exhausted. I know of some farms lying in small valleys, that have raised successfully for twenty-two years wheat and oats every year, and the crop has always been a good one.

I am to-day farming sixty-five acres, which for the past ten years have been sown to wheat alone, and all who have had experience in wheat growing know how it exhausts the soil. This year this piece produced as well as the first season I ever sowed it to grain. But I would not advise any farmer to pursue this course, for when the land begins to be exhausted, it goes down very rapidly, and then it is hard to raise it again, without heavy fertilizing.

BREAKING PRAIRIE.

My first year here I bought me a yoke of oxen, costing one hundred and twenty-five dollars. I bought them in preference to horses, as they were so much cheaper, and it required no grain to feed them, as our nutritious grasses were sufficient to keep them in healthy condition while at work. They are the team for the man who comes here with little or no capital. I began to break prairie about the first of June, the breaking season lasting two months, in which time the grass kept growing, so that when turned under it generated so much heat that the sod by Fall was thoroughly rotted. One yoke of oxen with a sixteen inch breaking plow, will break up from fifty to seventy-five acres in the breaking season. The first year this can be planted to corn, which yields from ten to forty bushels to the acre, according to the season. The next Spring this same ground can be sown to wheat, after clearing off the cornstalks, and then produces from twelve to twenty bushels to the acre, which, marketed, brings about seventy cents per bushel after all expenses are paid. If a man has broken with his cattle sixty acres, and the first year raised nine hundred bushels of wheat, you can readily perceive how he has got along, and what he can have in a few years by economy and frugality. While he is raising grain, he can at the same time beautify his home and increase its value (adding to his comfort by protecting himself from the inclemencies of our Winters

and storms of Summer), in planting out different varieties of native timber, of the kinds I have already mentioned.

WHEAT.

After my crop has been harvested and threshed, the straw is left in some out of the way place to become decomposed, or partly so, which will take from one to two years if left in small piles. I then scatter this over the stubble-fields lightly, and plow under in the Fall. I raise nothing but Spring wheat, and to produce a good sure crop, the ground for the same must be Fall plowed, the earlier the better, as the longer it remains exposed to the thawing and freezing of our Winters, the better its condition for the reception of the seed. Again, another advantage derived from early plowing in the Fall, or right away after the crop has been taken from the field is, that the warm days starve the foul seed of weeds and other worthless vegetation, and the first frosts kill them completely, thereby leaving the farmer's land in a good healthy condition to pursue his occupations without taking too much of his time in killing and contending against weeds and worthless stuff.

SOWING AND REAPING.

I have been much more successful than many of my neighbors in killing weeds. Then when the frost begins to leave the ground in Spring I go on with seeder and harrow and sow the grain, which is mostly done by the fifteenth of February to the tenth of March, thereby having my grain ready to germinate by the first rays of the Spring sun as he warms Mother Earth into vitality and recuperation. At this period the neighbors are not sowing, while my grain is growing and getting ready for the dry spell, which so often occurs just when the grain is in flower; but which does not so badly affect grain which has been sown in the latter part of March to the middle of April. I never let my grain of any kind stand till it is ripe, but when the stalk begins to turn yellow at the root, I hastily cut, shock, and put in stack, after letting it stand from one to two days, according to the condition of weather. My grain then is plump, healthy, and weighs heavier and is better

for the markets, commanding better prices for milling purposes. It is not affected in any way for seed either. I know from experience that it is better, and produces a more perfect crop than if it were left to get perfectly ripe before cutting.

FOREST TREES.

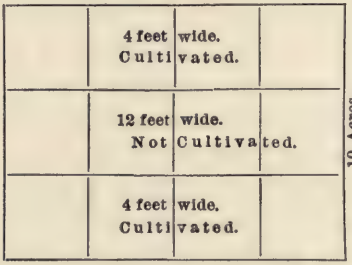
Many of the Eastern forest trees thrive here, such as the locust, walnut, ash, and poplar. The different ornamental trees which adorn the yards of our homes, grow rapidly, and do well.

My experience has been that trees of any kind, after being planted and cultivated two seasons, should never again be disturbed with hoe or plow, but should be mulched with straw and half rotten manure, which prevents the ground drying up fast, while at the same time it is a good growing fertilizer for them. I tried the plan just mentioned, and also pursued for four years the plan of thorough cultivation. After this length of time, my results are as follows, viz.: Those that were thoroughly cultivated did not attain in this time more than the one-half growth of the mulched ones, and were inferior in quality, not having a healthy appearance, and were more easily affected by insects. Severe sudden changes in Winter from warm to extreme cold, destroyed great numbers of them for me, especially of the cottonwood and walnut. But the mulched ones were preserved, and came out in Spring in a healthy, growing condition. I don't believe as many do, in cultivating all the land which you are going to plant out to a forest, for it requires more labor, and the expense is greater. Another objection is, that where trees are filled with weeds there is more danger from the ravages of prairie fires, which this open country is exposed to every Fall and Spring, destroying for the State vast amounts of property, and retarding her development to a great extent.

LAYING OFF GROUND.

I have ten acres laid out to be planted to trees for a forest, from which I expect in a few years to procure my fuel and poles for general uses necessary on a farm.

Instead of plowing this whole amount up and cultivating to trees, I lay the ground off into strips, twelve feet apart each way, with the strips about four feet wide. This width I cultivate, while the twelve feet between the strips I leave untouched, as it is the prairie in its native state. I herewith append a diagram, by which my plan can be more readily understood:



Planting trees out in this way, I have not the work to perform in hauling straw to mulch them with, as though compelled to scatter it all over the ten acres. By my plan of planting out trees I have only the four feet strips to cover, the twelve feet between being as stated the native prairie, covered with grasses. In this way, I have a beautiful, inviting little forest in five years' time, which is an ornament to any farm, and something that I may ever be proud of, to say nothing of the deep satisfaction to the passer by to see how easy it is to raise timber in Nebraska.

In presenting the advantages of this State another thing is to be considered. A farmer here has no stones or stumps to contend with, but rolling prairie or bottom lands, that lie contingent to sparkling streams, abounding in fish and wild fowl. Ye sturdy sons of toil, on these broad, shining prairies of Nebraska, God beckons you to come and convert the acres of wild grasses into vast fields of golden ears of corn and yellow waving wheat, nodding their heads to the blue vaulted heavens.

GEORGE A. HOBSON,

BEAVER CITY, FURNAS COUNTY.

A Fertile Section — Limestone Abundant — Mixed Husbandry — Orchard — Cost of Crops — Method of Planting — Short-Horns — Hogs — Bees — Poultry.

Furnas county contains an area of seven hundred and twenty square miles, through which pass from west to east, in a parallel direction, three water courses, with their fertile valleys; the Republican river on the north side, the Beaver near the center, and the Sappo on the south side, thus affording abundant water power for manufacturing purposes and giving the county a greater amount of timber and valley land than other counties in the State. As it is situated on the southern border of the State, this fact gives it a decided advantage in respect of climate. It possesses as fine Magnesian limestone for building purposes as can be found anywhere. The common limestone is also abundant.

THE FARM.

My farm is beautifully situated, and lies one and a half miles west and half a mile north of Beaver City, in the Beaver Valley, near the center of the county. It is the east half of section twelve, township two, range twenty-three west of the principal meridian, and has an area of nearly four hundred acres. The northeast quarter I have devoted to timber culture at present. The southeast quarter contains the homestead, and is given to mixed farming. I have a neat frame dwelling with a basement, near the east line, and about the center north and south. Northeast from my dwelling is my post and board corral, with stabling and stock shed fourteen feet wide, and one hundred and forty feet long.

AN ORCHARD.

West of the dwelling are five acres in an orchard of peaches, apples, plums, cherries, and pears. South of the house plat is a strip set in small fruit, as grapes, currants, gooseberries, blackberries, raspberries, and strawberries. The ground lying near my dwelling is set in evergreens, such as native cedar, and silver-leaved pine from the Black Hills country, which are in good condition. A wind-break planted to timber extends the whole length of the orchard and house plat on the north side. I have planted black walnut, cottonwood, ash, box elder, burr oak, hickory, coffee bean, English willow, and honey locust.

The soil is of such a nature that it is easily worked, being prairie, and not inclined to be wet, but withstanding extremes in the weather as well as any soil in the world.

MEADOWS.

Meadows are as yet Nature's own, and yield hay of superior quality. All I have to do is to take the mowing machine and hay-rake about the first of September, and put the hay in the rick in sufficient quantities for supplying the wants of my stock. The climate has a peculiar way of curing grass without cutting, and makes good grazing all Fall and Winter for stock.

GRAIN.

The cost of raising grain may be set down at the lowest figures, except where it might grow without much labor.

I sow the seed broadcast on the ground early, then with a good stirring plow and team turn it under, plowing as deep as I would were I cultivating corn. This puts the grain in nice drill rows. I harrow well, and the work of seeding is done with a large per cent. of labor saved, and an increased yield of from one-third to one-half more than any ordinary shallow surface cultivation. It is easy to calculate the cost. Putting the grain into the shock, besides the board of team and hands,

is one dollar and twenty-five cents per acre, and with favorable circumstances the land yields about twenty bushels of wheat, forty bushels of barley, thirty-five to fifty bushels of rye, sixty to eighty bushels of oats, per acre.

CORN.

For corn, I plow deep in Spring, and plant in check rows, cultivating three times. The yield is about fifty bushels per acre.

POTATOES.

I plant Irish potatoes on new ground, well prepared by plowing and harrowing. I drop in drill rows, sixteen inches apart in the row, and the rows are three feet apart. I cultivate well until they commence blooming, when they are laid by, and their yield is from one to four hundred bushels per acre; and I challenge the world to beat me in good melons, raised on sod, without cultivation.

CATTLE.

I have kept until recently from twenty-five to fifty head of cattle on the farm. I breed graded to full-blooded Short-Horns, and think them the best paying cattle for beef and milk.

HOGS.

The particular breed to be preferred depends upon the wants and circumstances of the farmer. If, for instance, he wishes his hogs to run after cattle that he is grain feeding, he naturally would want a breed that could take care of themselves; and for such purposes I know of no better than the improved Berkshires. But if he wishes to keep his hogs in confined pens, and his conditions are such that he can not let them roam at large, or keep them in extended inclosures (which is the case with us in this new country, where fencing material is scarce), the more docile the breed the better, so that when served with a proper allowance of wholesome food they will lie down contented, grow fat and mature at an early age. As such I know of no better than the well-known improved

Poland China breed, which is my choice. I know of no such thing as disease among hogs in this locality yet, and on this account I possibly may have not given this branch of husbandry sufficient and proper care in order to realize the greatest results, for I practice only common care.

HORSES.

I have a cross of the Printer, Double-head, and Messenger, with the English draft, Prince Coburg. Thus I combine size of bone and body, beauty of form, full, well developed muscular shape, speed, and a tractable disposition, which can not be excelled by any breed.

BEES.

Bees are not natives of this locality, and opportunity for giving practical details is very limited. I have merely experimented the past season, yet the result is quite flattering thus far. Without estimating the increase of colonies, I realized of surplus honey per colony thirty pounds, worth twenty-five cents per pound. There is no doubt but this business can be relied upon, with a certainty of success. We are blessed with the needed early and late forage for the honey bee.

FRUIT.

Fruit trees are not old enough for bearing yet (that is, cultivated fruit). The native fruits, grapes and plums, are abundant.

POULTRY.

The poultry on my farm are Brahma chickens, and for general use and profit there are no better breeds. I let them roam at large, and their roosts are in open sheds. They seek their own food about the farm, having access to millet in the rick, of which every farmer should have plenty for his poultry at least. I find they are easily raised. One peck of seed will seed one acre of ground, from which three to four tons of hay and seed may be harvested. I realized that amount this season. My turkeys are a cross of black and bronze with the native wild breed, imparting size, hardiness, and richness and beauty

of plumage of a changeable cast. They have an excellent color of skin when dressed, and are desirable as to flesh. I have been shipping my surplus for the past two seasons, and realized out of last year's shipment one dollar and fifty-five cents per head, in the Omaha market. I allow them to have their liberty, and rear their own young, and as they feed largely upon insects, their raising is not very expensive where this kind of food exists as plentifully as it does here.

My land I have already stated is prairie, of a dry nature, easily cultivated. The climate is mild, and this country is properly called the "poor man's country."

WISCONSIN.

WILLIAM ROHN,

JACKSON, WASHINGTON COUNTY.

Mixed Husbandry—Seventy Acres Under Cultivation—Thorough Plowing—Rotation of Crops—Gross Receipts $2,432 82.

My farm is situated in Washington County. It contains one hundred and twenty acres of land. Ninety acres are cleared. Seventy acres under cultivation. Twenty acres in meadow, which have been used for pasture for thirty years. The land was originally heavily timbered with maple, elm, burr-oak and basswood. Mostly level, a part of it gently rolling, but all with a natural drainage, with the exception of one ten-acre lot, which is drained by an open ditch. The tillable land is divided into seven ten-acre lots, which have been under cultivation from twenty-eight to thirty-four years. The subsoil on the level is hard pan, on the rolling mild clay. Great attention has always been paid to

GOOD PLOWING.

I plow eight inches deep, except for corn. My corn land is manured and plowed only five inches deep. This is done to keep the manure nearer the surface, and to give the young plants all the benefit of the manure for a quick start. I have adopted the following

ROTATION OF CROPS,

and have strictly adhered to it for the last eighteen years, as

the best suited to my farm, and by which the yield of the different crops has been increased without the aid of artificial manures. Plaster has been spread upon my clover and corn stubble with marked results.

My seven years rotation is as follows:

First year, clover (first crop to hay, second to seed).

Second year, clover (first crop to hay, second to pasture).

Third year, corn (manured with 18 two-horse loads of stable manure per acre).

Fourth year, spring wheat.

Fifth year, barley.

Sixth year, winter wheat (top dressed with six loads of well rotted manure per acre).

Seventh year, oats (seeded down with clover and part timothy).

The yield of crops of the year 1879 has been under an average, owing to chinch bugs damaging spring wheat, and drought injuring barley and oats.

THE YIELD

for the year 1879 is copied from my books, and the prices are those received at the railroad station on the 31st of October.

GRAIN SOLD.

Wheat, 424 bushels,	at $1 20	$508 80
Barley, 385 "	" 72	277 20
Oats, 396 "	" 32	126 72
Corn, 454 "	" 45	204 30
Buckwheat, 46 "	" 50	23 00
Clover seed, 38 "	" 4 35	165 30
Potatoes, 75 "	" 40	30 00
Mangels, 76 "	" 25	19 00
Apples, 20 barrels,	" 1 50	30 00
Hay, 32 tons,	" 8 00	256 00
Wood, 20 cords,	" 2 00	40 00
		$1,680 32

STOCK SOLD.

Wool, 270 lbs., - -	at $ 34	$ 91 80		
Lambs sold, 15 head, - -	" 3 00	45 00		
Increase of flock, 22 lambs, -	" 3 00	66 00		
Three fat cows sold, - -	" 33 00	99 00		
Six calves sold, - -	" 3 00	18 00		
Increase in value of heifers -		20 00		
" " " " colts -		65 00		
Pork, 3,600 lbs., - - -	" 4 00	144 00		
Butter 1,080 lbs., - -	" 12	129 60		
Milk, 1,460 quarts, - -	" 2	29 20		
Thirty turkeys, - -	" 75	22 50		
Sixty chickens, - - -	" 20	12 00		742 10
Total amount of all receipts,				$2,422 42

EXPENDITURES.

All the corn, oats, mangels, and hay, has been fed out on the farm, amounting to -		$606 42	
Wages paid out for all labor, including board,		554 00	
Three bbls. of salt, - -	at $1 15	3 45	
Ten bbls. of plaster, - -	at 1 15	11 50	
Seeds of all kinds, - - - -		115 00	
Two tons of bran, - - -	at 9 00	18 00	
Threshing, - - - - - - -		54 00	
Wear and tear of farming implements and repairs, - - - - - - -		100 00	
Taxes, - - - - - - - -		44 00	1,506 37
Deducting the expenditures from the receipts leaves a profit of - - - - - -			$916 05

The capital invested in the whole farm is $8,400. The percentage of the profit is $11.14¾ per acre, and this is not bad for an unfavorable season. All the farm work has been done by hired labor, being myself unable to do any.

THE AVERAGE YIELD

Of crops for the last four years, per acre, has been as follows:

Winter wheat, 32 bushels per acre
Spring wheat, 27 " "
Barley, 46 " "
Oats, 55 " "
Corn, 53 " "

In 1879 winter wheat yielded 34 bushels per acre, being above the average. Spring wheat only 18 bushels, barley 38½, oats 39½, and corn 50.

All fields intended for Spring crops are

PLOWED IN THE FALL,

cultivated with a Nishwitz cultivator twice in the Spring, sown with a broad-cast seeder, and rolled with a heavy roller.

THE STOCK UPON THE FARM

is as follows: ten cows, six heifers and calves of improved natives. They are stabled from the 1st day of November until the 15th of May. They are fed upon clover-hay, cornstalks, roots, chaff, wheat-bran, oats, and barley straw. By frequent change of diet, they are healthy and in good condition.

Most of the milk is made into butter, as we have no cheese factories in this vicinity. The cows are raised on the farm. Every year two or three of the oldest are fattened and sold to the butcher.

My stock are always healthy. Are comfortably housed. In the coldest days of winter their dung does not freeze under them.

MY STOCK OF SHEEP

consists of sixty Cotswolds, originating from Merinos. They will shear from nine to ten pounds of wool of fine quality. Last year the number of the flock was reduced to thirty-six by an advantageous sale, but is now up to the full number of sixty head. The sheep are fed during Winter on clover-hay, straw, and an allowance of one pint of corn per head daily.

FOUR WORKING HORSES,

including a Clydesdale stallion, and three colts, are the working forces of the farm. My colts are descended from Morgan

mares, bred to Clydesdale stallions. When five years old my horses will weigh about 1,300 pounds, and are well suited for plowing in our heavy soils. Two horses of this breed will plow my hardest ground, and are well fitted for all other farm work.

My barn is 36x60 in size, with underground stables, which are ventilated by air holes through the wall all round under the ceiling.

B. S. HOXIE,

COOKSVILLE, ROCK COUNTY.

A Model Dwelling House.

FARM BUILDINGS.

In my experience as a builder for more than twenty-five years, it is pleasing to note the change in the construction of farm buildings. The barn, from being a rough, unpainted structure, has grown to be something which has required some thought in its plan and details, as well as beauty in its adornments. And the house with the dreary, four square walls, enclosing kitchen, "square" room, buttery, and bedroom, with its low chambers for sleeping room, and cold enough in Winter to nearly freeze one's life out, has had its day, and yet there is room for improvement, both in construction and ornamentation.

I have read somewhere that one of the ancient law-givers of Greece, made it a penal offence for any one to construct a dwelling which should be void of beauty and harmony in its proportions. If this law had been in force until our day, we should not see so many barn-shaped, ill-looking structures, called dwelling houses.

THE HOME.

The house is the most important feature in the landscape, and should stand on the most commanding site of the farm, and be constructed with reference to other buildings which

cluster around it. In short, the house must be *our house*, and the style of architecture should help adorn the landscape, rather than detract from it. And right here is where so many make a fatal mistake, vainly supposing that because they want a given number of rooms, the work of building can be intrusted to any carpenter, and his opinion taken as to which is most convenient, or that it is cheapest to do the job with day workmen, or to let it to the lowest bidder. This last leads to placing it too low for a competent workman to make living wages, while he is forced to bid against the unskilled, and sometimes, unprincipled. The skilled workman often sees where the plan could be improved, as the work progresses, but he dare not mention it, for the change must be made at his own expense, or perhaps cause some unpleasant feelings when a bill of extra work is presented. My advice is, always consult a skilled workman, both in theory and practice, and if you are not able to have an elevation with detailed drawings, you can have the plan well defined and specifications made out in every particular. Then, if you choose, intrust it to your home carpenter, if he is an honest man. If you are not able to build as extensively as you want in the first instance, have your plan fully matured, and build so as to enlarge with additional rooms, and at the same time add to the harmony of the whole.

THE KITCHEN.

The kitchen, being the most important part of a house, I would start out with that, and have it as convenient as possible for the housewife to do her work in. In this have a good large sink, with a cupboard under the same. The sink proper should be three inches wider than the cupboard, for comfort in standing near it. Have an inclined board at one end, so that all the water from dishes or a pail may drip into the sink. At the other end have your cistern pump. Near the stove have a good sideboard, with cupboard under the same, for keeping tinware and other cooking utensils. The woodbox, an indispensable article, place in the partition next the wood shed, so that it can be filled from that side. By so doing you will save

much dirt and many steps for the tired housewife. If possible, I would have my sink on this same side of the room, and with a small slide door connect it with sink in wood shed, which will make it convenient for washing hands, when many workmen are round.

Again, do not have your well ten or fifteen rods from the house, and down hill at that, to save a few feet extra digging. Let your pantry open from the dining room, and if it is a large one, from the kitchen also, or have a sliding door over the sink or sideboard, as may be best arranged. In or near the pantry or one corner of the kitchen, have a dumb waiter, balanced so as to move up and down freely, into the cellar, and do not count the dollar or two of extra cost, but count what the extra steps will be in a lifetime without it. In the ceiling over every room put a register, so as to warm sleeping rooms above. This will also serve as a ventilator both in Summer and Winter.

I would build so as to have all my principal rooms connect with folding or sliding-doors, which makes it sometimes convenient for company, and more convenient in warming, either with furnace in basement, or with one stove. Above all else, see that ample space is made for closet rooms. I would have the pantry shelves all enclosed with light doors, and plenty of drawers, large and small, for sugar, salt, spices, tablecloths, napkins, and all such things as the tidy housekeeper wishes a place for. The bathroom must not be overlooked, and if it can not be in close proximity to the kitchen pump, a branch pipe can be put into the cistern, and the water drawn with another pump into the sink in the bath room. I am aware that no one plan will suit different persons, and so I have given none, but simply some of the essential things for a convenient house, leaving the plans to be worked out as the particular taste or the special requirements of the house demands. If any hint shall be acted upon, then my effort to benefit some one will not be wholly lost.

I. N. STONE,

FORT ATKINSON, JEFFERSON COUNTY.

Strawberry Culture — Soil — Transplanting — Cultivation — Gathering — Marketing.

PREPARING SOIL.

I select good corn land, that is free from clover and sod. I plow deep late in the Fall, or, if I do not plow in the Fall, I plow as early in the Spring as possible. If I plow in the Fall, I either plow again in the Spring or loosen deep with a cultivator, then harrow well and plank it. I mark the rows three and a half by one and a half feet, with a wheelbarrow or a marker that will not make a deep mark, or guess at the distance in the row while transplanting. For garden culture I have the rows two and a half by one and half feet.

TRANSPLANTING.

Early Spring is the best time to transplant strawberry plants, north of latitude forty-two degrees. If I set in the Fall, I must wait until new plants get well rooted. I never set any but new plants, and I have roots fresh dug or well soaked in water. I put one or two hundred into an old pan, taking care to keep the roots straight; then I take a dibble, made of wood, iron, or steel, and am ready to commence setting. I keep the plants by my side, and use the edge of the dibble to brush the dry dirt from the place where the plant is to be set; then I thrust it into the earth and work it back and forth until the hole is large enough to receive the roots of the plant when spread out fan shape. I use the point of the dibble to assist me in getting the roots into the hole straight, holding the plant close to the side of the hole next to me, and keeping the crown even with the top of the hole, I place the point of the dibble about two inches in front of the plant, and thrust it into the earth with the point inclined toward the bot-

tom of the root. Then I press toward the top of the plant, pressing the dirt close to the whole length of the roots. Now I withdraw the dibble, fill the hole, and the plant is set. If there are two or three persons to help transplant, it is economy to have a boy to drop the plants, provided the roots are not allowed to get dry.

CULTIVATION.

I do not allow the plants to fruit the first year, if they are set in the Spring. I use a cultivator that will work deep and not ridge the rows, cultivating and hoeing often. I never allow the weeds to get a start, or the ground to get hard during the whole Summer, but work cultivator close to the row, regardless of the runners, until the new plants begin to root, when I narrow up the cultivator during the remainder of the season, so that the row of plants will be about twenty inches wide at the end of the growing season.

Plants seldom get too thick the first year; if they do, I thin them early in the Fall. In garden culture, where no cultivator is used, I hoe deep, not, however, close to the roots. I make use of a spading-fork to good advantage just before I set new plants. About the time the ground freezes up I cover the whole surface of the bed with straw, leaves, or marsh hay, just thick enough to hide the plants. In the Spring, as soon as it is warm enough to start vegetation, I stir the mulching and move enough off from the row, putting it between the rows, to allow the plants to grow up through, and have a good healthy color. If it is necessary to cultivate the bed in the Spring, I remove the mulching from one row, cultivate it, then move the mulching from the next into it, cultivate, and so on through the bed. I do this just before the blossoming time. I pull large weeds, if there are any, until fruit is ripe.

If I desire to keep the bed another year, I find it very important to prepare it immediately after the crop is harvested, in the following manner: I remove the mulching, if it is not fine enough to work into the soil, cut the rows down so that they will be about ten inches wide, by using a horse and small, sharp steel plow, throwing the furrow from the row. This

leaves a ridge between the rows, which I can level by using an ordinary cultivator. Instead of taking a narrow strip from each side of the row, I take all from one side. By this plan nearly all of the plants left in the row are only one year old. I cultivate well until the new plants are ready to root, then I allow them to fill the space between the rows, not too thick, however. In the Spring I cut out the old row, if there are enough new plants for a crop, and use the place occupied by it for the pickers to pass through while picking. Should the row left to renew the bed fail to furnish enough new plants for a crop of fruit, I save it with a strip of the new plants on each side.

Unless the soil is very fertile, fine manure, free from grass seed, should be scattered on the bed freely after it has been well cultivated the first time, or early in the Fall. For garden culture I use the same plan as for the field, except to thin the plants. I use a hoe and a spading-fork to loosen the soil.

GATHERING THE FRUIT.

It is very important to have a good supply of packages made up ready for use before the berries are ripe. I divide the beds so as to pick half every day, except Saturdays, when I pick all that are ripe, in order to get over Sunday without having over-ripe berries for Monday. One person who has had experience, with a boy to assist him, can attend to fifteen to twenty pickers and case the berries, by adopting the following plan: Take cases filled with empty boxes into the field, also four to six hand-racks, made so that about eight quart boxes can be carried in each. Give each picker a row and a box, with instructions to pick the berries by pinching off the stem of the berry, about one-third of an inch from the hull, using great care not to loosen the hull or bruise the berry, and giving orders that they never put over-ripe or too green berries in the box. As soon as the pickers are all at work, give the one that is to assist two hand-racks filled with empty boxes, and tickets that can not be duplicated by the pickers. Then when they get their boxes full he can take the full box,

giving an empty one, and a ticket. This enables the pickers to keep their places, and saves a great deal of careless moving around on the bed. The overseer should pass around frequently among the pickers and see that they are doing their work right, examining their partly filled boxes often, and looking after their rows to see if picked clean. If the pickers are getting scattered so as to make it inconvenient to wait upon them, those whose rows are ahead should be placed on the row or rows that are behind — right opposite where they are — and work back until they meet, then each should take his own row again. The overseer will find time to case the berries ready for market, and have them put in a cool place as soon as full cases are gathered. When through picking for the day, count the tickets of each picker, and place the number, with the price paid per quart for picking, in pickers' account-book, to his credit.

MARKETING.

If berries are picked in the middle of the day they should be cooled through before forwarding, if possible, by placing them in a cool, dry cellar. They should be carried on springs, and handled with care, and forwarded to fruit dealers that have a good retail trade, and who will not rush off a large quantity at a low price, just for the sake of selling at a good profit a lot of cans or some other stock which they may happen to have. I find it the fairer way, both for the grower and dealer, to send the berries regularly through the season, giving the dealer power to fix the price from day to day, with the understanding that he is to sell at the top of the market in his locality, and that he is to receive a certain per cent. on the selling price. He must also send weekly statements of his sales. If the market should get overstocked at any time at some of the places shipped to, most dealers will gladly release a grower for a few days on a part or the whole of the regular shipment if wished, and the surplus can be sent to those that are not overstocked. A home market should not be overlooked, and the grower should use his own judgment some, as he will know the condition of the market.

J. W. WOOD,

BARABOO, SAUK COUNTY.

Clearing a Farm in the Woods — Soil — Cutting — Burning.

Skillet Creek farm lies about two miles southwest from Baraboo, in Sauk county, Wisconsin, in the midst of a heavily timbered region, consisting of oak, maple, elm, basswood, hickory, and butternut, with all their common varieties, and this is thickly set with the ordinary brushwood of such regions.

Every foot of its tillable land has been hewn out of these heavy forests, entailing a vast amount of labor in the past, and with no prospect of its speedy abatement. The farm contains two hundred and forty acres, of which about one-half is already cleared and is mostly in crops. A small creek, which rises in the Baraboo bluffs, to the west of Devil's lake, runs through it, affording excellent water privileges for stock, and falling over rocky ledges for about twenty-five feet, forms the Skillet creek falls; a beautiful spot, attracting the attention of tourists, and which is made the scene of many picnic and other festivities.

The underlying rock is the Potsdam sandstone of the lower silurian formation. It is heavily covered with drift, but outcrops at the falls, and in neighboring localities, exhibiting the characteristic fossils of that formation.

An elevated ridge on the south side of the farm is capped with the lower magnesian limestone, which can be burnt into a strong, gray quicklime.

A slight dam across the creek, three feet in hight, gives a head which irrigates about ten acres of the farm. This is devoted to gardening and small fruit.

SOIL.

The soil of these timbered lands, is found to be a rich clay loam, extremely well adapted to general farming and

especially to grass, but needing a short rotation in crops, returning frequently to clover in order to keep the soil friable and in good condition for other crops. The rotation practiced, is clover, corn and small grain, re-seeding to clover. Plaster is found to be of great value when applied to the clover.

Root crops are raised to quite an extent, and two root cellars, one of them under the granary, and connected with the hog pens, holding about fifteen hundred bushels, and another, fourteen feet wide in the clear, and one hundred and two feet long, arched with stone, and covered with four feet of dirt, afford ample storage for these roots, and for the products of the market garden, to which a portion of the farm is devoted.

CLEARING.

The work of clearing off timber I generally perform in the Winter. It might be surer death to the stumps if it could be done while the trees are in full leaf, but my Summers are occupied with other work. Choppers can be more easily hired in the Winter, as farm work is mostly laid aside, and then again, we need the snow for removing our logs and other heavy products.

I prepare for my Winter's work as early in the Fall as possible, and in the first place carefully go over the ground, cutting the under brush and piling it into compact heaps, picking up the fallen stuff as far as I conveniently can. A few rotten chunks thrown in with the brush will, when dried out, greatly facilitate the setting of fires. I next cut out all of the small timber which I find suitable for rails. I either remove them or place them in solid piles, so that a tree accidentally falling across will not break them. The stumps of all of this small timber are cut so low that a sled can readily pass over them while doing the heavier work.

IN CUTTING TIMBER,

a good woodsman is careful in felling his trees to lay them where they can be readily worked up, without interfering with other trees, either by lodging in their branches or crushing

the smaller ones in their fall. I haul my logs to the neighboring mills, to be cut into lumber for my own use, or sell them to the mill owners. Good oak logs, butt cuts, will bring about seven dollars per thousand, measured by Scribner's rule. Basswood and maple, suitable for furniture, bring about six dollars; dry maple wood is worth three dollars and fifty cents per cord; oak, two dollars and seventy-five cents, and basswood, one dollar and fifty cents.

The remaining timber I cut into cordwood. I use a horse drag saw, with which I cut such sound chunks as are not fit to saw for logs, and are too tough or knotty to split if cut four feet long, into sixteen inch lengths, for stove wood.

BURNING.

When the piece is well chopped over, I prepare for a burn. I roll out any old stuff not piled, from its bed of leaves, loosen up the rotten wood, so that it may dry thoroughly, close up the brush heaps in good shape, and wait my time. In May or June, a very dry spell, attended with high winds often occurs. I provide barrels of water located near objects which I wish to protect. With the utmost care I often burn up things which I do not wish to. When all is ready, and we have a dry time, with a high wind in the right direction for safety, I get some help, and apply the match. The dry leaves will generally carry the fire from pile to pile, but I watch it, and supply all deficiencies.

HOW TO SEED THE NEW LAND.

The best possible use to make of this new land is to seed it to timothy grass, and pasture it closely until the sprouts are all killed. In close woods, where grass has not grown, this can be done by sowing in the Fall to wheat and seeding. This plan often gives me a good crop of grain, and leaves every thing in good shape. Seeding can be done in the Spring, by sowing with oats. It is unfortunate to have to plow such land. In oak timber I can do it more readily than in other kinds, for the roots run deeper; but it is very embarrassing to have the plow catching among the green, sharp roots.

STUMPING.

If the sprouts from the stumps can not be killed by pasturing, they must be cut off with an axe; not simply cut off, but split away from the stumps, taking off all the bark that will go with them. I can not emphasize too strongly the importance of closely pasturing such land. The stumps ought all to be killed in two years' time. The ground will then be ready for the plow sooner than one would suppose. I never wait to get rid of all the stumps before using the reaper and mower, provided the bottom is good, and none but good large ones are left, which show plainly in the grass or grain. An extra man is set to work with the machine, who will mow or cradle around the stumps, so that there is but little waste or hindrance to the machine. We should remove the stumps from fields as rapidly as possible. They form hiding places for vermin, and become centers of dispersion for many kinds of foul seed. They interfere with all the operations of farming. Never wait until they are entirely rotted out. Their period may be hastened in many ways.

PULLING THEM OUT.

Machines are made that are very powerful and effective in pulling grubs and stumps, but it takes too much time to handle them, and they often pull up an amount of dirt and sod which it is difficult to manage. There is nothing so profitable as to let a stump alone until its hold of the earth is greatly weakened by the rotting of its smaller roots. A stump which will jar in its roots by a heavy blow from an axe can generally be removed with but little labor. A strong team will often tip it over. Where the top breaks off, the remaining portion can often be split through the center and one half turned out by prying over the other half. A beetle and wedge can be used to split the more refractory. A twelve-foot lever planted under some projecting root will some times start a very formidable stump, and help a team in tipping it over. A few blows from a heavy sledge will often knock a stump all to pieces.

The best stump puller I have ever used is made by stand-

ing a strong lever, ten feet long, upright by the stump, and wrapping the stump with a chain. Another chain passes from the top of the lever to the axle of a wagon or cart, which is loaded with stone enough to keep it from lifting. The team then draws, and is assisted, if necessary, by digging, prying, and cutting off roots. It is astonishing what stumps can be taken out in this way. A man soon learns to tell by striking a stump whether it is worth while to attempt it or not. A stump which would require more than ten minutes to extract, had better be left until the next occasion. The time to work at them is either early in the Spring or late in the Fall, when the ground is wet. It needs two or three persons to work to advantage. We often see a wandering kind of an article in the papers saying that saltpetre or kerosene can be used to advantage in burning them out. I have tried them, in both green stumps and dry, without the least perceptible benefit.

BURNING THEM OUT.

When stumps get old and rotten, there often comes a dry time in which they can be burned to advantage. Such stumps as can be pried out can be used in burning others. I burned a hundred stumps from an acre of land by the use of sheet-iron stoves. I made four or five of them, of different sizes, out of some old stovepipe, joining two lengths for the hight, and giving them a conical form to fit the stump. A flattened joint formed the top, from the center of which arose a joint of six-inch pipe, to form a draught. The old rubbish which abounds in a timbered country, with loose and broken stumps, formed the fuel. I would start a fire by the side of a stump, place over it a suitable sized stove, put the cover on top, with a sod to hold it in case the wind was blowing, leave sufficient space beneath to form a draught, and go off about other business. Some stumps would be consumed by a single fire, others would require more fire, just like a green chunk in any other stove. I only visited the fires once a day to set them going, and, while the process was slow, it was effectual and cheap.

Basswood stumps are the most refractory, and unless very

rotten and dry, can not be burned out. Maple and elm burns the most readily, while oak seldom burns out with a single fire. When a stump was burned to the ground I could remove the stove, and lay a chunk on the embers, which would retain the fire and eat its way down to the dirt. In this way I made all my rubbish useful. In respect to dynamite, I have corresponded with the agents for its sale until I have learned that it is too expensive to be used with us. There are places where it may pay. It might be just the thing to hoist some of the more refractory fellows, but we always have time as an element in our favor; all that we need is patience. I have indicated many ways in which their periods may be shortened. Where their number is reduced to three or four solid old oaks to the acre, I begin to think of dynamite, but it is not probable that I shall ever use it. I fear it might hoist the wrong object.

ELI STILSON,

OSHKOSH, WINNEBAGO COUNTY.

Spring Wheat — Drainage — Fertilizers — Short-Horns — Sheep.

My farm consists of eight hundred and forty acres, north of Oshkosh, Wisconsin, and between Lake Winnebago on the east and Fox river on the west, both less than a mile distant from the farm. When I settled on the farm it was about one-half prairie and one-half burr oak openings, only slightly rolling, and underlaid with red clay containing lime gravel. The whole surrounding country gives evidence of drift formation. The red clay, with a small mixture of lime gravel, often crops out in the openings, while on much of the prairie it can be reached with deep plowing. It is rich in the elements to grow wheat and clover, and the close texture of the subsoil prevents leaching.

DRAINAGE.

But the close subsoil, and only slightly rolling surface,

renders the land too wet in a wet season for grain, without underdraining. Hence the necessity for the system which I adopted, and have steadily pursued for the last fifteen years, of underdraining the farm until it has now about nine miles of underdrains. At first I used white pine fence-boards, free of sap and rot, for drains, and some that have been made fifteen years are yet sound and doing good service. But since the manufacture of drain tile, tile only have been used. For all drains, except the largest main drains, I employ two by two and a half or three inch tile, and lay them at an average depth of two and a half feet, at an average cost of about forty cents per rod.

Those portions of my farm on which crops would fail in a wet season have now been made as productive as the best. Not only does the drained land stand wet well, but it also stands drouth, and the soil is more loose and friable, of fine tilth, and much warmer than undrained soils.

SPRING WHEAT.

Spring wheat is a leading grain crop, and on one hundred and fifty acres sown yearly, I have had an average yield for twenty years of twenty-two and one-eighth bushels per acre. The lowest yield was in 1864, when the drouth and chinch bugs cut the grain down to fourteen bushels per acre for that year. The highest amount raised was in 1865, when one hundred and eighty acres averaged thirty bushels per acre.

CORN.

All the corn I raise I feed to stock on the farm, and in good seasons my average is from fifty to sixty bushels per acre of corn.

OATS.

Oats I find more exhausting than wheat, and pay less per acre than wheat. I only raise them for home use.

CLOVER.

Clover and manure are my dependence for preserving the fertility of the land. I sow four quarts of clover seed and four

quarts of timothy seed with Spring wheat, for meadow or pasture, and three quarts of clover seed only when the land is to be sown in wheat again, and the clover plowed in, which makes a cheap fertilizer.

Two and a half tons of hay are my average for the first crop, though three tons are sometimes grown. The second crop of the first season in meadow, I usually save for clover seed.

FERTILIZERS.

Land plaster, or gypsum, is sown on all clover after the first year, but the first year's crop will not bear it, as the clover will grow too rank. Clay land shows the most marked effect of the plaster, and its value applied to grain is small as compared to clover. One hundred pounds of plaster per acre applied the last of April, I think, is ample, and there is no fear of exhausting the land when the crop is fed to stock on the farm.

ROTATION OF CROPS.

For a seven years' rotation, I sow land with clover, and timothy three years, then manure at the rate of sixteen large loads of rich manure per acre, and plant in corn one year. A larger quantity of manure will cause the wheat to lodge badly, and not fill. I then take three crops of wheat and seed the land to grass. The rotation I vary, sometimes, as follows:

Three years are given to clover, then one year to wheat, then I manure and plant one year in corn; next two years in wheat, and then seed it down. For soil not in a high state of richness, I adopt a five years' rotation; two in clover, one in corn, and two in wheat. This rotation is less exhausting to the land, and proves more beneficial to most soils. When any lean spots appear in a field, I dress them with manure again during the rotation.

The heavy cropping of the land is more than counterbalanced by the large amount of manure made, and the use of clover as a fertilizer, and underdraining, so there is a steady increase of productiveness.

I look to the soil to compensate for the exhaustion of the

crops. Nor do I believe that any system can long be followed profitably that does not by rotation, somewhere return to the soil the elements of plant growth removed in the crops. But for this purpose the air and subsoil may be drawn on for a part of the supply, if an intelligent course be pursued.

STOCK.

I have on the farm sixty head of fine thorough-bred Short-Horns, for breeding purposes, though most of them are excellent milkers, and mature early, making superior beef. My experience leads me to decide in favor of the Short-Horn as the average farmer's cattle to fill the whole bill on the farm. About sixty high grade Short-Horns are also kept for milk and beef.

SHEEP.

I have six to eight hundred sheep, Merinos, and a cross of the Merino and Cotswold. The latter commands the highest price for fine combing wool. Before my Short-Horns were put on the farm, I only kept about two sheep to the acre.

WHAT MAKES THE FARM PRODUCTIVE.

Sheep, cattle, clover, and underdraining have all combined to produce the result given, for so long a time, with such uniform good success. Lands which in a wet season were forbidding and unprofitable, I have now made inviting, productive, and profitable.

FEEDING.

I purchase wheat bran and feed to stock. The phosphates of the wheat, which are almost entirely contained in the bran, are thus returned to the farm and stock. I feed some oil cake with good results. It not only lays on flesh fast, and makes a rich manure, but it promotes the good digestion of the stock, and enables them to utilize the nutriment in their food to the best advantage. The full benefit of oil cake is but little understood by most American farmers, and our English brethren are allowed to obtain most of this product from America, to the detriment of our own agriculture, and stock growing and feeding. It is surprising to see how much more stock the

farm can carry now than at first, and yet keep up the number of acres of grain.

SUPPLYING WATER.

I raise water for the stock by a wind-mill, and store it in a large tank, over which there is a house to protect it from freezing. In this house, by the side of the large tank, is a small tank on a level with the many watering troughs in and about the barns, which I keep for the use of the stock.

In the small tank floats a hollow copper ball, which draws water as the stock drink, and the connecting pipes from the small tank to the watering troughs are laid below frost, so there is a constant supply of water at all times. I think I have a complete system of watering stock from wells.

MY BARN.

My barn has a frontage of two hundred and sixty-two feet, and with the addition of the three wings it has a length of six hundred and fourteen feet, and contains two hundred and eighty thousand feet of pine lumber. I have stabling for one thousand sheep, one hundred and thirty head of cattle and horses, and hay to Winter them on, with barn room for four thousand bushels of unthreshed grain. The cold Winters make stabling desirable for stock, while the cheap lumber of this locality pays better in barns than wet stacks of hay and grain.

MY HOUSE.

My dwelling house is commodious, built in the most approved manner, and yet at a moderate cost. The main road leading north from the city passes through the center of my farm, and is one of the finest graveled roads in the West. It is bordered on each side with rows of maple trees, and is one of the finest drives to be found in any rural district.

B. B. OLDS,

CLINTON, ROCK COUNTY.

How to Handle Apples, and Where to Keep Them — Fruit House.

HANDLING AND KEEPING APPLES.

Doubtless many are ready to say that all has been said and written upon this subject that need or can be said, forgetting how few fruit growers bring into practice the teachings of the best and most experienced fruit men, and how many are making failures rather than success in this most important branch of business.

While I hardly hope to bring out new ideas upon the subject, I shall feel amply paid for my effort if I succeed in awakening an interest that may result in any decided change among farmers in the way of handling apples.

SHOULD BRING BETTER PRICES.

From observations made in marketing my last year's crop as in years before, I am convinced that with proper care the early and Fall apples may as well bring eighty as forty cents per bushel. The most common way practiced by the farmers whose methods have come under my observation, is, as soon as it is seen that the apples are falling freely, and are ripe and mellow, to shake them from the tree and hurriedly dump them into bags, with stems and leaves clinging to them, including perhaps the small and inferior wormy ones all right in together. They then take them off in a lumber wagon to market, pretty well satisfied with a net sale of forty cents. The dealer says, "That is all we can pay for Wisconsin apples," while at the same time good Michigan apples, well put up, are selling for two and a half to three dollars per barrel. Under these circumstances the dealer can't afford to pay any more,

as if the supply is large, or the weather becomes unfavorable, they soon begin to perish, and perhaps a portion have to be thrown out, the dealer feeling glad it he gets his money back, and disgusted with that kind of business.

MARKETING.

I watch the ripening of the different kinds carefully, and before they are ripe enough to fall I pick by hand carefully into hand-baskets; then, without bruising them, I put the fruit into crate boxes, or new clean barrels, ejecting every thing inferior. The low grade are kept for cider or some other use. After packing carefully and securely, I place them in a spring wagon and make for the market, driving slowly. On arriving there, the dealer inquires, "What have you got?" I describe them as well as I can, to which he replies, "Oh, they are Wisconsin apples; I'll give you forty cents for them." "No," I say, "I want eighty cents." He turns away, saying, "Forty cents is all they are worth, for I bought of Mr. So and So for that yesterday, and he'll bring some more in a day or two." Arguing awhile to convince him of the superior conditions in which my apples are, I leave him, he still persisting "they are only Wisconsin apples; won't keep; can't sell them; haven't the flavor nor quality of Eastern apples, as this is not a fruit country," etc. I go on with my load, and after awhile meet with a customer who will talk sense, and being pleased with my fruit takes his supply, well satisfied with my price. He sees that my plan is much above the common method of handling, and besides that they are much better coming fresh from the orchard, than those shipped from abroad.

Strange as it may seem, I find five of the former to one of the latter sort of customers, though I avoid all the former kind when once found out.

CRATE BOXES.

While upon this subject, I will describe my crate boxes, which I find very convenient, and would recommend them for every orchard or fruit man's use. I take common boards ten inches wide, and saw off two pieces eleven inches long for the

ends. Then I take a bunch of lath and saw them in two in the middle; nail four of these pieces on to the ends of the boards for the sides of the crate, with five on one side for the bottom, then one on each side of the top, so they can be set top of each other. When I use them for marketing, I shake down and pack full, nailing on the other three pieces, thus making a nice bushel, convenient to handle in the wagon or fruit house. These can be made at odd times before needed for use, and be snugly packed away till wanted. I find them especially convenient for marketing the early fruit in a retail way near at home. If the crates do not go with the apples, pack them away for another year's use.

SORT APPLES.

Another important aid in selling is to have the apples sorted so as to appear uniform in size, packing the small ones by themselves, to sell for what they will bring. Don't understand me as recommending the use of crate boxes for all kinds of apples, only where they are convenient in either orchard or fruit house. Different kinds need very different handling. Most of the early and Fall apples should have access to the air, while such as have a tendency to shrivel, require close packages. These are the Fall Swaar, and nearly all the russets, and some others, which, if left open, soon become tough and nearly worthless. Always be careful to have the packages pressed and secured closely before sending to market.

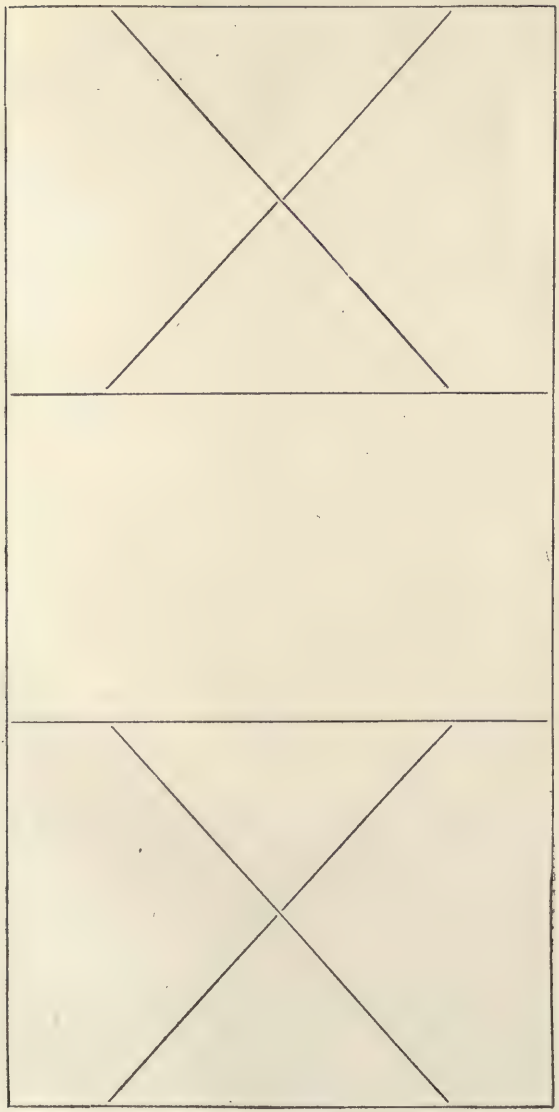
KEEPING QUALITIES.

Now let us consider the keeping of apples. From this season's experience, having had to endure three weeks of unbroken August weather in the month of October, and now finding, as was generally apprehended, that apples in the ordinary way are not keeping, the question comes forcibly, "What can we do in time to come to meet the same kind of an emergency, to which our climate seems to be so subject?" I have sought, and am still hoping, for a better answer than I am able to give. The importance of having suitably constructed fruit houses, forces itself upon my mind as a necessity

which, to a great degree, has been overlooked. An ordinary farm house cellar is a poor place for keeping apples; generally it is too warm and damp, being more or less stored with potatoes and other vegetables, from which odors and gases escape that apples readily absorb, and which tend to hasten their decay as well as to impart bad flavors. What seems essential is to be able to maintain an even, pure, low state of atmosphere. The Birdsall refrigerator system is without doubt good, but it seems rather impracticable for common use, as it is regulated by ice, and just at the season when it is most needed the ice fails. From the first of September to the first of November is the time of all the year when it is of vital importance to know how our fruit is preserving, and although it may pass that time without decay, yet if the late keeping kinds have been subjected to a process of forced ripening, either on the tree or anywhere else, they are not in good condition for keeping through the Winter.

A FRUIT HOUSE.

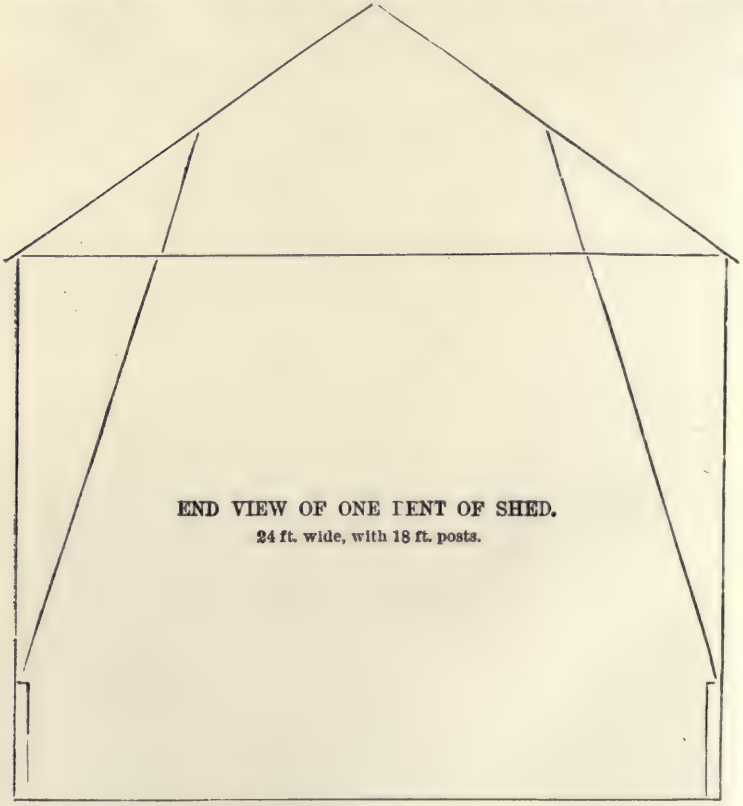
Having had three years experience in the use of my fruit house, built in 1876, I will give a brief description of what it is, and what it has proved to be. It is twenty-four by thirty-three feet, two stories high, with a cellar below. The walls are made of common fencing for studding, sheeted both outside and inside. This space is all packed with tan-bark, except at each of the corners, where a space is left to serve as a ventilating chimney, having connection with the rooms of each story by a trough or passage made under the joists of the floors (they being sealed underneath). These chimneys connect with the open air, and are all provided with shutters to be used at will. Furring is placed upon the inside sheeting, and another lining of matched stuff, which, with double doors and windows, makes a building almost impervious to heat or cold. While the building proves of great value, I do not consider the ventilating system complete; for experience shows that the currents of atmosphere are not controlled upon the same principle as fire or smoke in common chimneys. I there-



SIDE VIEW OF OPEN FRAME OF SHED.

40 feet long.

fore conclude that the subject requires much scientific study and careful application, to which we need give our earnest attention When frosty nights commence, I control the temperature of the building easily, by opening the doors and windows at night and closing them in the morning, which gives a satisfactory temperature for three or four days of continued warm weather. A little fire may be needed in extreme cold weather.



END VIEW OF ONE TENT OF SHED.
24 ft. wide, with 18 ft. posts.

In conclusion, I would repeat the general principles safe to act upon. Have all your packages ready before your apples are ripe. Use none but clean, inviting looking packages, and always pack snug and full. Never shake, but pick and sort with careful handling. If you have a fair market

accessible, dispose of your surplus as soon as ready, and do not wait for it to become mellow. Never attempt to get rid of poor or inferior apples by mixing with good ones.

The diagrams are rough drawings of a cheap shed frame, made of light scantling, and firmly put together with half-inch bolts. They were designed to be open all around, and are roofed with dimension boards, set on fence posts four feet in the ground. They were built in 1878, and cost fifty dollars. They are valuable for hay, loose grain, clover seed and straw.

GEORGE J. KELLOGG,

JANESVILLE, ROCK COUNTY.

Fruit Growing and Marketing — Preparing the Soil — Apples — Pears — Plums — Cherries — Grapes — Currants — Berries.

LOCATION AND SOIL.

The location and soil for a fruit farm is of the first and greatest importance. If the site is poor, no care can make fruit raising a success. It may be a satisfaction to have a meager supply, but it can never pay. Avoid flat, level lands. There must be surface drainage. Avoid hillsides that wash badly; also hills with subsoil of gravel or sand. Clay marl, or clay loam, with an underlying of limestone, such as our timber ridges afford, are the best locations. Where white oak and hickory, burr oak and butternut abound, there you will find the elements of soil suited to tree growth. Undulating knolls, ridges, sloping sufficient to easily run off the surface water, even very steep, rocky hillsides, and the highest table lands, are often very successful locations.

The hilltops of northern and northeastern slopes are excellent sites for the orchard. If already located, and must have the orchard on low ground, back furrow until the place is raised for each row from one to two feet higher than the dead furrow. On this ridge the trees should be planted.

VARIETIES.

In putting out an orchard of from five hundred to one thousand trees, I set the root grafts where I want the tree to remain, and drive a stake by each miniature tree, and plant the field for three years to corn, or some low-lived crop.

The cost of grafts does not exceed one cent each, and I always set two in each place to insure a perfect stand, cutting out or transplanting if both grow. Next to grafts, I prefer two or three-year old trees.

PREPARING THE SOIL.

This must be thorough, and if sufficiently rich for corn, it is good enough for apples, pears, plums, grapes, and small fruits. The latter will bear higher cultivation than trees.

When I have only sand subsoil and gravel knolls, potatoes and white beans pay best. I then buy my larger fruits. Still, if a man is foolish enough to think he can succeed, he must dig out a two-horse wagon load of sand and gravel, and go to a limestone quarry or clay ridge, and get soil and stones sufficient to replace the dirt drawn away, on which he should set his tree. It is very essential in replanting an old orchard, when it is desired to have the trees occupy the same place as the dead trees, to dig out a large hole, burn a brush heap in it, or replace the soil with fresh dirt, as in the case of the sand or gravel above mentioned. By so doing, success and failures are about evenly balanced. In all cases of planting, cut the roots fresh, back to sound wood, unless "callous" has formed. Plant two inches deeper than trees which stand in the nursery. In case of root grafts, set with a dibble, and be sure to make the dirt tight at the roots, and set to the upper bud of the scion.

I have given instructions as to planting and location before I have named the varieties. This is the most difficult part. If you have a friend or neighbor who has soil and location similar to your own, see if he has any thing that is a success. But oftentimes the changing from one side of a river to

the other gives so great a change of soils that what is a success in one place, may be an entire failure even within rifle shot.

APPLES.

If you are planting for family use, it takes a wider range of varieties than for the market. The family needs a succession of fruits, while for the market you may expend all your energies on one variety. Take the one that is a success, as that pays. No matter whether it is an early fruit or a long keeper, make it a specialty.

When Stickney would recommend all Duchess of Oldenburg, I would recommend planting Early Rose potatoes for the first five years. From these you can have either early or long keeping apples the first year, and plenty of them. If you can't find any trees about you that are bearing, and insist on a list for Wisconsin, I will give it as follows: Tetofsky, Red Astrachan, Duchess of Oldenburg, Fameuse, Wealthy, Pewaukee, Tallman Sweet, Golden Russets, Ben Davis, and Walbridge. I might add ten more kinds, but refrain. As to crab-apples, the Transcendent must be set on rather poor soil, or it will blight. Whitney's No. 20, Hislop, Briar's Sweet, on clay only. Most of these apples and crabs will succeed on all locations, and many more where the situation is choice, and especially where the orchard stands near a large body of water.

PEARS.

If you must have pears, grow Early Rose potatoes, or white beans, and buy your pears, or hire out by the month in harvests for ten dollars a month, and save your money. The pears I name, however, are Flemish Beauty, Clapp's Favorite, and Winter Nelis as the best three, adding Early Bergamot as the fourth and earliest. These will all stand a temperature of twenty-five below Zero, if it is steady cold.

PLUMS.

Plum prospects are just about like pears, as regards profit.

I once believed the Miner or Hinkley was to give me plums. It is hardy, a good grower, but outside of a little circle of Grant county, it is a humbug. It is curculio proof, for the little Turk can't find it. The Lombard is very prolific, and bears itself to death. It will stand the cold about as well as pears, but you must catch Mr. Turk this time, or no plums.

I have strong hope of the DeSoto, and proof that in many places it is a great bearer. This is certainly curculio proof. I also have the Basset, and if half is true that is told of it, I can raise nice plums for twenty-five cents per bushel.

CHERRIES.

Plant largely of Red English, Early Richmond, and English Morello. The more you plant the happier you will make the birds. Better have them on Morello stocks, if they do sprout and cost double.

GRAPES.

Any good corn land will bring good crops of grapes, but the best situations for orchards will hold good for grapes. There are but few kinds that will succeed on south hillsides, and the south side of buildings. There must be circulation of air to prevent mildew, and too great heat will scald the leaf of very many of our choice kinds. Of varieties there is endless confusion. The general adaptation, health, vigor, and productiveness of the Concord, has placed it at the head of the list of the poorer quality of table grapes. It has some seedlings, however, which promise to exceed the parent in all the good points, and far surpass it in quality. The Worden is best known, and most widely disseminated. It has never failed to give satisfaction. Still, there are others making great pretensions. Many of our choice varieties come out, make a swell, and ride back on the same wave and sink forever.

Of the old varieties that still demand recognition, I will name but few — the Worden, Concord, Delaware, Wilder, Agawam, and Lindley. I would like to put in a reliable white grape, but Allen's Hybrid will mildew, the Martha is poor in

quality and quantity, and the Lady Washington has not met my expectations.

CURRANTS.

I must not overlook the currant, but must fight its enemies and keep it for the good it brings us every year. The old Red and White Dutch, White Grape, and La Versailles, are among the most profitable. Dust the leaves while wet with white hellebore, as soon as any worms appear, and keep at them. Use the same solution as you would for canker worm on the apple. This will do the currant worms good, but do not apply it after the fruit is set: One pound of arsenic in one hundred to one hundred and fifty gallons of water. It will use up the canker and currant worm.

GOOSEBERRIES.

Among gooseberries, Houghton, Mountain, Smith's and Downing will give the best returns, and they are free from mildew. The last two are far the best.

BLACKBERRIES.

The best of these is Ancient Britton—hardy, prolific, and good quality. Some make a practice of giving Winter protection, others do not. The Snyder is a comparatively new variety. Within four years it has been twice killed just at the snow line, while the tips remained perfectly fresh. The cause of this I am at a loss to know. It seems good for thirty below zero, and productive to a fault. Other varieties are making wondrous strides. A new one, and Wisconsin bred, is Stone's Hardy, in which I have proof that it is adapted to our climate, and is of good quality.

RASPBERRIES.

For black, plant Doolittle, Mammoth Cluster, and Gregg. These ripen in the order named. I should put in Davison's Thornless, if it paid. The Gregg is the largest and latest, and the three are indispensable in every collection. Of the red raspberries, I put Cuthbert first in every point; second, Brandywine; third, Turner; but neither of these will do for the

small garden, because of their propensity to sucker, unless the suckers be treated as weeds. The best for the garden, probably, is the Philadelphia, although it is too dark for some. I think it indispensable. Among the red are many claims to public favor. Some have a local reputation, some are so tender they Winter kill, but during twenty-five years I have found nothing equal to the above for general market and family use.

STRAWBERRIES.

Last but not least of the small fruits, I come to the strawberry. Here there is as much chance for bewilderment as among grapes. There is a rage for new varieties, something better every way than the Wilson, large as apples, and choice as Burr's New Pine. While it may not be found, certainly very great effort has been made with very great results. First on this list of clamorous favorites I may put the Shapeless, with its berries that so often reach nine inches in measurement. It is an exceedingly vigorous and healthy plant, has a perfect bloom, great productiveness and excellent quality, with perhaps only one thing lacking — firmness; but it has sufficient of this for any ordinary transportation.

Of the new varieties I place the Crescent as the most vigorous, productive, and luscious of the whole list. As to its quality, however, there is a diversity of opinion. Some soils serve to give it an insipid flavor, but nearly all good judges place its quality ahead of the Wilson. It lacks the firmness of Wilson for long shipments, but some marked points of superiority will long make it an indispensable variety. It was stated at our State convention that it would glut the market to introduce this generally among farmers, as it requires no care after the first year, except the picking of the enormous crop of fruit. I will give one instance from my own grounds last season. In 1878 I planted eight hundred Crescents in one block, rows nineteen rods long. In the last row there happened to be just ninety-nine plants. The tending was good. I mulched in the Winter following with chip manure. The row had formed a bed three feet wide. No cultivation or weeding was done in

1879. The first two pickings were not kept separate; the third picking, one boy in nine hours picked from the row of ninety-nine plants just one hundred quarts of extra nice fruit. The yield after this was not kept separate, although it was picked at least seven or eight times, giving each time good pickings of large and very satisfactory fruit.

One point of difference of opinion regarding this variety, is the perfection or imperfection of the blossom. While the later bloom seems pistillate, the early seems, and is, hermaphrodite. In planting this kind by the acre, it will be well to set a row of Wilsons every rod.

I will notice a few of the new sorts. The Capt. Jack is healthy, vigorous and very productive, exceeding its parent, the Wilson, but lacking character in flavor, and requiring great care in picking, or the calyx will be left on the vines. For family use, this is a point in its favor.

Red Jacket, though a choice family berry, is so firmly attached to the calyx that a knife is needed to hull it. Crystal City is claimed to be ten days earlier than the Wilson, and every way as worthy. Glendale is the latest of all. Its only objection seems to be the large calyx, which detracts from its quantity.

Before leaving the list of strawberries, let me call attention to the great value of the Green Prolific for home use, setting every third row Wilson. Thus you get an enormous yield, but without some variety to fertilize, it is entirely worthless. It is hardly safe to take plants from an old bed, for it is so vigorous you will be apt to get all Green Prolific, which will be a failure. A friend of mine, from a row of Green Prolific ten rods long, picked nine bushels per week through the best of the season. Col. Cheney, also pistillate, is choice and large.

MARKETING.

A few words on marketing and I am done. Let the packages, whatever they are, be clean and attractive. Let the fruit be as good at the bottom as the top. Reject all defective specimens. Assort into sizes, as it will pay, and put the price

enough higher to make it pay. Always give full measure. A small sized package rounded up, will always sell better than the same quantity in a large package. Always supply the home market, and by saving freights and commission you will find your net profits better than on shipments. In picking apples, do it as soon as the variety begins to fall from the effects of ripening. Handle as carefully as you would eggs.

Always remember that the best market is the home market. I refer now to the family. Plenty of fruit means very few pills.

JAMES W. TRESTRAIL,

SEYMOUR, LA FAYETTE COUNTY.

Hog Pen — Sheep Shed — Racks — Dairying.

DESCRIPTION OF HOG PEN.

My best hog pen is made on the following plan: The building is sixteen by forty. One-half of its entire length is covered by a shingle roof, for the sleeping places. This is divided into four apartments, calculated to accommodate comfortably from eight to ten hogs in each. The other half, in front of the sleeping places, is about four feet high, and is boarded close. Between each apartment is a sliding door (up and down), also one at each end. When the ground has a little fall, the upper end is most convenient for driving into, and the lower end for loading up for market, by backing the wagon right up. It is built on rock pillars, but where rock is scarce and timber plenty, posts can be set into the ground to rest the frame on. The floor is about two feet from the ground. I use grub plank for floors, and inch boards for partitions. The troughs run the entire length of the pen, an outside board being removed immediately above the top of the trough, so as to pour in the slop from the outside. Inside is a cover for each trough, hung on hinges, which I let remain

down until the slop is emptied in. This cover is held up by hooks and staples when feeding; but this is very little used, as hogs soon become docile when fattening. On the outside in front is a platform one plank wide, running the entire length of the pen. This platform is about a foot high, and is used to walk on to deliver the slop or other feed. Cooked grain is almost entirely discarded in our neighborhood, most farmers using it in the raw state. Some prefer having it ground, and soaking it, whilst others are just as successful when they soak the grain whole. When the weather is cold, I lay aside all theories, and feed shelled corn, or corn in the ear.

SHEEP SHED.

My sheep shed fronts to the south, and is sixteen by twenty-four, eight feet high in front, with a shanty roof about one-quarter pitch, making it four feet high behind (or the back part). The yard in front is close boarded, four feet high, about double the capacity of the shed. When the nights are very cold, I turn them all into the shed. My door is divided in two, so that the upper part can be left open for ventilation, and for light. I have one board in front, hung on hinges, which can be held up by the hooks and staples for the same purpose—light and ventilation. During the Winter I let my sheep out at noon time, and turn them in again at or before sun-down. When the weather is not severe or stormy, I leave the door of the shed open, so that they can use the yard or shed at their own pleasure.

RACKS.

My racks for feeding are on the back part and one end, about three and a half feet high, and flare a little at the top. The second board from the bottom is also left out. I have also a board left open on one side of the yard for the sheep to eat out of. My feed boxes run through the center of the shed, just high enough for them to eat out of. They are shallow, and not wide enough to tempt them to jump into. There should be two or more, as that allows alleys for them to pass through. This is a cheap shed. A more costly one might have more

conveniences. I am a new beginner with sheep, and only have forty; but this shed affords plenty of room. My roof is made of boards lengthwise, lapped about one and one-half inches

WINDMILLS.

With regard to windmills, I can say but very little, as our county is well watered. The few farmers who have windmills, simply have a tank or trough for the water to run into, bringing their horses, and letting the cattle go to the trough or this tank. Some run the water into troughs for their hog and sheep yard.

CREAMERIES AND DAIRYING.

I only know of one creamery in the county. It is situated in the town of White Oak Springs, and was commenced last Summer. The stockholders are satisfied with its workings.

In regard to dairying, I can only give you my own mode, as described by my better half. The first and most essential thing in making butter is cleanliness. In Summer her milk pans are washed in two waters. We use stoneware pans, and the milk is kept in the cellar. My cellar is the full size of the house, and the milk cellar lies on the north side. Two windows are on the north side, and there is a lattice window over the door in the partition wall opposite to the outside window, and opposite to the outside door on the south side. In Summer the milk stands for three meals; but if a thunder-storm arises, not so long. After churning, the butter is worked over three times. My wife never washes the butter, nor puts any foreign substance into it, save salt, about one ounce to the pound. In Winter the milk is kept in the buttery. It stands about five meals, and is worked over twice after churning.

In Summer I feed my cows grass. In Winter I feed them corn-stalks, oat straw, a little clover hay night and morning, and about a dozen good ears of corn each.

OHIO.

ULRIC BLICKENSDERFER,

ASHTABULA COUNTY.

Energy in Farm Work — Skillfully Directing Hired Help — System in Management — Improving Appearance of Farm, Inexpensively — Clay Soils — Foot Rot in Sheep — Farm Accounts.

FARM MANAGEMENT.

Residing upon a farm from the age of eight till long after attaining majority, educated for the calling at an Agricultural college, I acquired both a practical and theoretical knowledge of its details. Observing that moderately large farms were not paying as well proportionately as small ones, when in theory they should pay proportionately better, like any other business, on account of the manifest advantages which operations on a large scale have over those on a small, I made this subject a special study, practically, and after acting as a superintendent of a farm of nearly one thousand acres, and then of another of fifteen hundred acres, the result of my experience is, that a large farm can unquestionably be made to pay as well as can other kinds of business, if properly managed. By this I mean that it is necessary that the farmer have a thorough practical knowledge of and experience in the business, a tireless energy, attention to its details, and the faculty of managing hired help advantageously and keeping accounts with every crop as if it were an individual. It is impossible to say which of these requisites is most important; all are absolutely essential to success.

All this is best illustrated by narrating actual experience. The farm first above referred to, was situated near Conneaut,

Ashtabula county, Ohio, on the eastern limits of the Western Reserve, (a celebrated grass region, the soil being about twelve inches loam with a hard clay sub-soil,) and when I assumed charge it was receiving but fifteen hundred dollars a year for sale of products, with little or no profit on that. At the end of the second year my books showed sales of eleven thousand dollars, with a profit of five thousand dollars; which could have been steadily increased, until the full benefit of the complete rotation of crops (four years) should have been attained. The farm and its business was in every way run down, having but one farm team, one light road team, one extra horse, four colts (of breaking age), two old wagons, no reaper, mower, or drill, an entire deficiency in all farm implements and those on hand exposed to the weather. Buildings, fences, etc., were dilapidated in appearance, rubbish scattered everywhere, fence rows full of weeds, and the whole face of things looked badly enough. Part of the farm was not being used at all, but growing up in weeds, and a small portion rented to shiftless tenants, growing poor crops. The remaining five hundred acres were in forest, the timber of which was mainly only fit for fire wood, and was being cut at the rate of a few hundred cords each Winter and sold to a neighboring railroad. The problem first presented was, to bring order out of all this confusion, put the farm under a good state of cultivation and appearance, with as little expense as possible, and make it pay while doing it; which was most satisfactorily and practically carried out in the following manner:

First, resuming control of all rented land, I laid out a regular and systematic rotation of crops to follow each other annually. The best rotation for such land I found to be corn, oats, wheat, meadow, the ground finally on the fourth year (following the third year's wheat), going into meadow to remain such for three years, after which it would begin to fail or run out, and could be used for one year to supply pasture, before plowing up for corn again, in the rotation. There being five hundred acres plow-land, this system of rotation required the annual plowing of about sixty acres for each of the three

grain crops, and made the period of the rotation (that is, the time in which you got back to the original sixty acres, with the same crop again), eight years, viz: four years in alternating with corn, oats, wheat, and meadow, on the same sixty acres; four years more in resting three years as meadow and one year as pasture: making $8\times60=480$, or the five hundred acres.

Second, though in carrying out of this plan it took the first year to get fairly going, sixty acres were put in corn the first season, and other smaller temporary crops were planted, pending the more rapid and extensive bringing of the five hundred acres plow-land under cultivation that must follow in the second year. Two yoke of oxen were bought, and the four colts broken in, to give two more horse teams for the second year's anticipated work, making four span of horse teams and the two yoke of cattle then ready for the year's cultivation. During the Winter these young horse teams got thoroughly broken for following Summer's work, by sledding out wood in cutting off timber. The previous Winter some three or four hundred cords had been cut, and much of it hired hauled out. I now hauled it out with our own teams much cheaper, and gave the teams (necessary for the Summer farming) profitable Winter employment, cutting and hauling out about eighteen hundred cords, which gave many idle persons Winter work, chopping by contract per cord. The receipts for this year's operations footed five thousand dollars, and expenditures were that amount, as we paid four hundred and sixty dollars for the oxen alone, and bought several wagons, a reaper, a drill, harness, implements, etc., etc., all extra outlays necessary in starting, aside from the ordinary regular expenses, as hired help, repairs, running expenses, improvements, (limited carefully,) living of the family, etc., etc.

The second year the ball opened in earnest; but we were then ready for it. The sixty acres corn stubble of the first or preceding year, were put into oats; sixty new acres into corn. Only one hundred acres hay were cut—remains of the old regime,—but on the completion of the period of rotation, two

hundred and fifty acres good heavy grass were to be cut annually. After having the sixty acres oats of this (the second) year harvested, the ground was put into wheat and seeded down for new meadow of the ensuing year, and the three years thereafter. In the Fall, the sixty acres corn were cut, husked immediately, the fodder stacked, and the ground Fall-plowed for oats the coming Spring. During this (the second) Winter nearly four thousand cords of wood were cut and mostly hauled out by the farm teams, giving them profitable Winter employment again. The thriving condition of the business of the farm at the end of the second year, is best shown by comparing its condition before with the first and second year after my management.

		Expense.	*Receipts.*
	BEFORE.		
	No system in cultivation - - - - - - - - -		
	But few acres in crops - - - - - - - - - -		
	400 cords wood, annually cut - - - - - - -	—	$1,500
	AFTER.		
1st year.	A systematic rotation of crops, etc. - - -		
	Viz: 60 acres corn, harvested - - - -		
	60 " corn-stubble Fall-plowed (for oats the 2d year) - - - - - - - - -		
	20 acres Winter wheat, (put in temporarily, pending the rotation.) - - - - -		
	75 acres grass cut (pending the rotation.)		
	1,800 cords wood cut - - - - - -		
	Farm stocked with teams, wagons, reaper, mower, drill, implements, etc. - - - -	$5,000	$5,000
2d year.	60 acres corn, harvested - - - - - - -		
	60 " oats, " - - - - - -		
	60 " corn-stubble, Fall-plowed (for oats the 3d year) - - - - - - - - -		
	60 " oats-stubble, put in wheat (for 3d year)		
	60 " Winter wheat seeded (for new meadow 4th year) - - - - - - - - -		
	20 acres wheat harvested (pending the rotation)		
	100 " grass cut (pending the rotation) - -		
	4,000 cords wood cut - - - - - -		
	Farm much improved in appearance everywhere; buildings and fences repaired, weedy fence rows plowed up; rubbish removed, etc.	$6,000	$11,000

It must be borne in mind that the object in the case of this farm was to revive and increase its business, at the same time improving its appearance and condition as fast as possible, with as little expense as practicable; and it will be seen that this

was all accomplished by the end of the second year, the farm paying a profit all the time, with a fine future prospect.

Details of leading features of my management are best given under corresponding heads; for example:

ENERGY IN FARM WORK.

I always drove my work, never allowed it to crowd me. Some persons are always behind in their farm work. There is no need of this. It is a sure indication of incompetency. Haying and harvest is generally considered a very busy, dreaded time. I could never see any difference, merely employing more help then, — beforehand of course. I was always pushing my work, Winter, Spring, Summer or Fall, and to me it was haying and harvesting all the year round, so far as being busy was concerned. Nor could I ever find time to get away. In pushing my work I always anticipated its scope. When the corn was ready to cut, I hired extra help and cut and husked it rapidly, the regular month men cribbing it and stacking the fodder, and as soon as done beginning the Fall-plowing (clay ground) before it should freeze up. I always had my crops in on time, anticipating the time and work. For example, it would take one drill a certain number of days to put in sixty acres. I always commenced at it early, ahead of time, to anticipate unforeseen delays, or bad weather. Once I was remonstrated with, that the weather was too bad (being damp and even slightly drizzling) to do good drilling. I replied, "So long as the ground is not too damp to cover the grain pretty well, I must keep on, or it may be yet even worse and make the last of the crop late." I kept on so several days, finally finished, when the weather became rainy for several days; it was about the close of seeding time too, but the crop was in and did finely.

SKILLFULLY DIRECTING HIRED HELP.

My experience and observation is, that lack of this is one of the most common causes why farms employing hired help do not pay better. I was always first on the ground, and last to leave it. I would not allow talking while at work, but was

never dictatorial. If a quiet hint to a talker did not answer, his services were not considered desirable. I always set my men an example in everything, and expected them to do likewise; deeming it unnecessary to lord it over them to obtain respect. There is a certain happy medium between extremes in the treatment of help. There is a way of inspiring respect, by the proper course of conduct. I never call James Jones, Jim nor Mr. Jones, both extremes with farm employees, but Jones. This is neither familiar, nor over-done.

I watch everything closely as possible, without seeming to to do so. If the least thing went wrong, I noticed it, and the person sooner or latter became aware of it. Even if the hired help were scattered over the farm, my eye was on them, An amusing case, illustrating this, was that of several men cultivating corn some distance off, whom, as it was very hot, I directed to rest their horses often but not long. Going down to the field within a couple of hours after, when I came in sight they were resting according to orders; and started their teams again before I reached the ground. They were told that they had stopped too long at a time. I was met by a puzzled, inquiring expression, but replied, that "to wait until the sun dried the fresh earth in the last row, was too long!" No exceptions were taken to this ruling! The explanation was no doubt satisfactory.

My experience is, that success in directing hired help, and farm management in general, lies in constant personal attention to details. Direct them to be and see that they are attended to. Also, keep help at work that will return a profit, like cropping. There is too much other work about a farm that men are often put at, which brings no returns.

SYSTEM IN MANAGEMENT.

This, is truly half the battle. My plan was always to have everything move like clock-work, as nearly as possible, by which I could always get much more work done by a lot of farm laborers. For example, when I took my string of half a dozen teams and their drivers to haul out wood, I took my

dinner-pail with the rest and engaged passage on the front team. Arriving at the wood-piles scattered through the clearing among stumps and brush, instead of allowing each one to look out and load for himself, the five remaining teamsters came forward and helped me and the first team. In five minutes it was off. The four remaining then helped load the second, and it was quickly off. So on, until finally the last one had only myself to help him load. When he was off I had just time to look out a place for the first to drive up and load. I would cut off a log, throw open a pile, or take off part of its end, and so on. If it was still a difficult spot to reach among stumps and piles, or where by setting his wagon or sled in a certain position, he could load quicker, or start much easier, I met the team, jumped on, took the lines, and without stopping, dropped into position I had got ready for it. I never found a teamster who could drive in or round a difficult place better than I, and much delay and breakage were saved by doing it myself. At the end of the route where they unloaded I always placed a reliable foreman to see that they unloaded and did not delay. This party's idle time between loads was put in piling. In this way a stream of wood poured out ceaselessly all day, and we got much accomplished. The principle of this illustration I always carried out in all my farm work.

IMPROVING APPEARANCE OF FARMS.

Some people do this at great expense. My plan was, if a fence needed moving or rebuilding to take several men and superintended the operation in person. It is work easily "soldiered" at. Besides, I laid the "worm" straight and rapidly, working systematically. I expected a man to handle a rail as quickly as I; and they were ashamed to be very much slower. I meant business when I worked, was never spasmodical, every day being the same with me. On taking a new piece to begin the rotation, turning in all hands I set a fence out from its nest of weeds in short order, and plowed it up with the field. The three years of crops killed the weeds, and it only cost setting over the fence. So of stumps, or other unsightly

things. Every stump that the two yoke of oxen, doubled, could pull out, without delay or repeated working, was quickly taken out and burned. Such as would not come out, no time was lost on trying to dig them out, but they were left to decay. If a fence rail got out of place I put it back myself when passing. If a corner sagged, or length was plainly out of line, sometime in passing with several men it was lifted in a moment to its place. Pieces of rubbish I picked up and did not allow them to begin to litter up a place, whether about the farm house, barns, or other buildings. It is easy to keep every thing looking neat, if you only try.

CLAY SOILS.

I always plowed my corn-stubble ground for oats in the Fall, hurrying off the corn for that purpose. The frost disintegrates or slacks the hard clay lumps into a mellow ash heap. The frost does all this work for you, and far better than you can mellow it if Spring-plowed, though you harrow it all Summer. Besides, you get your oats in a month earlier in our latitude (Northern Ohio), and they get a start ahead of weeds and grow rank. The effect of Fall plowing of clays I found to be fully equal to manuring, if not more. I have thus got oats in as early as last days of February — unprecedented in that latitude. Even if the ground should freeze some after that, it won't hurt them. This always gave me more time in Spring for corn plowing, etc. Indeed, driving my farm work, or anticipating it in these ways, always seemed to make it easier, and I got so much more done with a small force of regular hands. Yet the farmers alongside, who saw this constantly done, are to-day letting their corn stand unhusked, for cold winter work, its fodder spoiling; they Spring plow clay corn stubble for oats, get the seed in late if a rainy Spring, and secure a small crop, even, if dry, thus crowding every Spring to get both oat and corn plowing done.

FOOT-ROT IN SHEEP.

When superintending the farm of fifteen hundred acres, I had a flock of twelve hundred grade sheep. They had the

foot-rot badly. It was the same with flocks generally in the neighborhood, and their owners, disheartened with repeated attempts to cure them, were selling out and buying new. This flock was of Merinos, and highly valued by the owner. The common remedy was the application of a solution of blue vitriol, swabbed on after paring the hoof properly. I became convinced that the manner of applying the remedy was wrong, not the remedy itself; in other words, that they were not thorough in applying it. Swabbing did not always reach every crevice or spot in the hoof. I built a small box-pen that would hold just four sheep packed in solid like spoons, so that they could not move round; made each end a door, and put a water-tight box of same size, a foot high, in the bottom. Into this I poured a solution of the vitriol deep enough to reach above the hoofs. I conveyed steam from a large iron kettle through a tin pipe into this, to keep it as warm as we could bear our fingers in. We had a thorough-going, faithful Scotch shepherd in charge of the flock. I had the sheep held in front of him, feet upwards. He sat and pared the feet of each one. One finished, it was removed, and a second attendant supplied its place with another, and so on. In this way he never left his seat or lost a moment. Every sheep went through his inspection and operation. I could trust him implicitly, in his thoroughness. By this little system he handled, single-handed, the flock, large as it was, rapidly. After he was through with each sheep it was stood in the solution. Four filled the pen, and when the fifth was ready the first was let out, and so on. In this way each sheep stood in the warm solution about fifteen minutes. It is needless to say the remedy was thus applied in a very thorough way, practical for the handling of a large flock. On the second application the disease had almost entirely disappeared. The third wiped it all out.

FARM ACCOUNTS.

I found it impossible to carry on farm operations by hired help, without keeping accounts with every thing. Nor did I find it absolutely necessary to be skilled in book-keeping. The

simpler accounts are, the better and more practical. I had a simple system of my own. I did not have a complete inventory of stock, valuation of farm, etc., but merely used a common account book with a Dr. and Cr. column, in which I opened an account with each crop, as corn, oats, wheat, potatoes, and hay, and with the stock, as cattle, sheep, and hogs. Also, several general accounts, as wages paid hired help, or, briefly, hired help, where I entered sum total of wages paid each day, miscellaneous expenses, miscellaneous work, household supplies, repairs, and improvements. This is about all that is needed to keep a very complete run of all your farm operations; though other accounts may suggest themselves, and you can go more into detail each year, as you realize its benefits. Of course I kept, also, an individual account with each hired man.

My account with a crop of sixty acres of oats, one year (twenty-four hundred bushels), showed its cash cost to be fifteen cents per bushel, viz: seven and one-half cents wages paid the men on each bushel, four and one-half cents cost of seed for each bushel, and three cents per bushel for threshing. We sold them for thirty-two cents per bushel. I never add cost of boarding help, time of team (your own), wear on implements, and interest on cost of the land. All that is a refinement in accounts that renders them impracticable for the every day farmer, but charge the whole in general accounts against the total receipts of the farm for the year. This gives the grand result and from the general and detailed accounts you can figure further at the end of the year, on the investment, if you wish; but if you keep the above simple accounts, you can easily keep the run of what you are doing.

I also had a practical and easy way of my own for keeping these accounts, the want of which is the principal reason why many keep no accounts at all of farm operations. I carried in a long pocket-book slips of foolscap, cut two and one-half by six inches long, for my "field notes," or memorandums. Each morning, at the head of one of these slips (see sample below), I put the date, and A. M. for the first half of the day,

using a lead pencil, with a rubber head to erase the mistakes. From there down, on the left hand side, I wrote the last names of the hired men, not alphabetically, but in groups, according to the work different squads or persons were put at. Some would be set to cultivating corn, some attending sheep, and some cattle, some cutting wheat, some haying, some repairing, others doing miscellaneous work that did not come under any particular head, as chores, hauling water and straw. A bracket mark showed who composed each group or detail, and an entry was made opposite each, noting the work each was at. If, after quarter of a day, any or all changed to other work, the figure ¼ was then annexed, meaning they were engaged at that work quarter of a day; and a word or two, as, hay ¼, etc., indicated what they worked at the other quarter day up to noon. In the afternoon, P. M. was put in the middle of the slip, and the list of men again penciled down, at noon-time, according as the work had shaped during the forenoon, for the last half of the day; or according as decided for the afternoon's operations. Toward evening, in the field, as leisure occurred, I turned the slip over and made headings of sheep, hay, corn, repairs, and miscellaneous work, according to what was done and noted on the slip during the day. Then the names of the men and the length of time they worked during the day on each crop or job (usually not less fractions than quarters of a day), were set down under these headings according as they had respectively been employed, and their wages for the time engaged at each employment carried out. If a man's wages, working at so many dollars per month, came to thirty and ten-thirteenths cents for the half day, or proportionally for a quarter of a day, I carried it out so, to the very fraction of a cent, and entered it for the part of the day he worked on that crop under its heading, and that of any others similarly employed. It was, in effect, simply charging the corn or hay crop, etc., with the wages expended on it for the day. I then added up the wages paid for the day on each crop or job, and set it a little to the right, where, adding up these different sums, showed the sum total of wages paid for the day, and on

what. At night, all I had to do was to transfer these amounts to my general account book, charging each corresponding crop or account—the work of but a few moments; or, if I had not the time, any evening, I kept the slips till a leisure hour, or even the end of the week. They constitute your journal, or day-book. In adding up the different amounts carried out against each crop, etc., to the right, on your slips, if the sum total does not every day come out alike (absentees, etc., deducted), you know there is an error somewhere to look for. Thus you prove the account of each day's work and amount charged against each crop or account, to be correct and free from errors. These slips (or pages in a pocket memorandum book) should be preserved.

I give a few actual examples, showing both sides of one slip or page:

FRONT.

JULY 15, A. M.

Augustine, Mowing, grinding knife, scythes, etc
Roach—Tedding and raking hay.
Stewart—Miscellaneous work (errands, etc.)
Gilnes—On house, garden, and stable chores.
Payne, Stires, Hauling. — Haying ½ day. — Hay put in lower sheep barn.
Mason, Langtry, Minks, Mowing away in barn. — Haying ½ day. — Hay put in lower sheep barn.
Dyer—Horse fork. — Haying ½ day. — Hay put in lower sheep barn.
Stokes—Hand rake. — Haying ½ day. — Hay put in lower sheep barn.
Lang, Butts, Pitching in field. — Haying ½ day. — Hay put in lower sheep barn.
Payne, Stires, Mason, Langtry, Working corn. — ½ day.
Minks—Sheep. — ½ day.
Dyer—Cut'ng weeds. — ½ day.
Stokes, Langtry, Butts, Hoeing potatoes. — ½ day.

P. M.

Stires, Payne, Augustine, Hauling and mowing in field.
Roach—Raking, and in the mow.
Mason, Langtry, In the mow, in barn.
Gilnes—In the mow ½ day; misc. work ½ day.
Butts, Minks, Stokes, In field, pitching.
Stewart—Water boy.
Dyer—Horse fork.
Lang—Sick.
Rose—Sick, all day, not at work.

BACK.

Corn.		
Payne,	.16 9-26 c.	
Stires,	.17 4-13	
Mason,	.31 1-4	
Langtry,	.31 1-4	
		.96 4-26
Sheep.		
Minks,		.15 5-13
Misc. Work.		
Dyer,	.25	
Stokes,	.12 1-2	
Butts,	.15 5-13	
Lang,	.31 1-4	
Stewart,	.25	
Gilnes,	.51 12-13	
		1.36 3-52
Hay.		
Augustine,	1.00	
Payne,	.49 3-26	
Stires,	.51 2-13	
Mason,	.93 3-4	
Langtry,	.93 3-4	
Minks,	.46 2-13	
Gilnes,	.17 4 13	
Dyer,	.75	
Lang,	.31 1-4	
Roach,	1.25	
Butts,	.46 2-13	
Stokes,	.37 1-2	
Stewart,	.25	
		7.91 43-52
Absentees:		
Lang,		.62 1-2
Rose,		1.25
		$12.51 12-13

W. G. HUSCROFT,

STEUBENVILLE, JEFFERSON COUNTY.

Methods — Clover — Feed for Milch Cows — Farm Receipts and Expenses.

LOCATION OF MY FARM.

My farm is situated on the State road leading from Steubenville to Cambridge,— two miles from the former city, and the Ohio river, and on the high land, about five hundred feet above the level of the river. The soil is mostly sugar tree and black walnut, but there is some white oak and beech subsoil and limestone clay.

It lies mostly to the south, and the natural crop is blue grass. My farm contains one hundred and fourteen acres, which have been under cultivation about seventy years.

METHOD.

My method of farming is as follows: A sod is broken up in the Spring and well top dressed with stable manure, then planted in corn. The next Spring it is planted in oats, and in the Fall again top dressed with a mixture of about twenty-five two-horse wagon loads of stable manure and one bushel of common salt. The ground is then thoroughly pulverized with the harrow and roller, and sown in wheat and timothy.

Of the crop of 1878, there were in wheat twelve acres, sown with the drill, one and one-half bushels to the acre. When threshed, there were five hundred and ten bushels of good clean wheat, or forty-two and one-half bushels to the acre. The variety was the Clawson, sent from the Agricultural Department at Washington, six years ago, weighing sixty-three pounds to the bushel. Over two hundred bushels of this crop I sold for seed. There were nine hundred and five bushels, or fifty-six and one-half bushels to the acre, of oats, from sixteen

acres sown by the drill at the rate of two bushels to the acre.

From four acres of Hungarian grass sown on the twentieth of May, I harvested fifteen tons of hay on the twentieth of July. I had in my timothy meadow twelve acres, which produced twenty-four tons of hay and twelve bushels of seed.

CLOVER.

From eight acres of clover I harvested twenty tons of hay for my first crop. The second crop yielded eleven and one-half bushels of seed.

I planted eight acres in corn, the ground being thoroughly pulverized with the harrow and roller. I planted on the tenth of May, in rows three and one-half feet apart, with a drill, dropping one grain every twelve inches. The amount of corn in the ear, measured in the crib, was one thousand and twenty-six bushels. Corn planted in this way produces large ears in place of so many small ones.

POTATOES.

I had four acres in potatoes, but, the season being unfavorable, the yield was small, amounting to but five hundred and ten bushels. My method of planting potatoes is to heavily manure the ground, then plow about eight inches deep, and work down with a harrow and roller. The ground I then run out in rows three feet apart, and drop the potatoes, two pieces in a place, two feet apart, and cover them with the hoe two inches deep.

I usually plant one acre the first week in April; the remainder about the middle of May. This insures me a full crop.

SWEET CORN.

I put in one acre of sweet corn. It was of the mammoth sugar variety. This acre produced about thirty dollars worth of corn, besides supplying three families. With the corn were ninety-five loads of pumpkins. These pumpkins I planted about the first of June, in every other row of corn, about six feet apart in the rows. I had sixty-five acres in the crops, and left forty-nine acres of pasture for the stock.

HORSES.

I keep six horses to do the work of my farm. Last year they hauled one hundred and fifty loads of manure from the city.

BERKSHIRES.

Last year I raised eighteen Berkshire hogs, worth eight dollars a piece, and ten sheep, on my place. My sheep raised fourteen lambs, and I clipped one hundred and ten pounds of clean, washed wool. I have forty milch cows, which produce an average of eighty-one gallons of milk per day. This milk I haul to town, where I receive an average of twenty cents per gallon for it.

FEEDING MILCH COWS.

The produce of six days I take to town and sell, but that of the seventh I keep to make butter for the family. My cows are tied in the stable to be milked and fed. A small engine is attached to the stable, by which all the feed is steamed. This engine runs a machine which cuts all the hay and straw, also a pair of burrs which grind the corn all in the ear. Equal portions of this meal and mill-feed are taken, mixed with the cut hay and straw, and all steamed together. The pumpkins are also steamed. Three pecks of this mixture are fed to each cow twice a day, after which a little dry hay. In the Winter, fodder is fed to them in the barn yard in the middle of the day, at which time in Summer they are turned into pasture.

BUILDINGS.

My house is brick with stone trimmings. It is forty feet wide in front by sixty-four feet in depth and twenty-seven feet high. In front there are two bay windows, with a veranda between them. From this veranda a hall, twelve feet wide, runs through the house, on one side of which, on the first floor, are three rooms, and on the other three rooms and a washhouse. Up-stairs there are four rooms on each side of this hall. My house is all finished with lumber cut from the farm, black and white walnut and ash, tastefully combined, and polished and varnished. The roof is of slate. A cellar runs under the

whole house, and at the kitchen door is a good well. Under the wash house there is a cistern twelve feet wide by twelve feet deep.

My spring house is built of brick, and is fourteen feet wide by sixteen feet long. It has a floor of cement, and the water runs all over it. Here the milk is placed to cool before it is taken to town.

There are three small houses for the hired men, who each have a house and garden free.

My cow-barn is fifty-four feet long, thirty-eight feet wide, and twenty-four feet high. It is divided so as to hold four rows of cows, two rows facing each other, divided by a gang-way, from which they are fed. The room above I make use of for storing hay. I have the stable cleaned out every day, the manure and urine being run out together, while the cows are absent, and a good bed of straw is allowed to each cow.

My grain barn is sixty by forty feet and twenty-four feet high. It is a bank barn with a horse stable underneath, and is fitted up with a hay fork for unloading.

FENCES.

The fences on my farm are mostly board and wire.

PRODUCTS OF THE FARM.

510 bushels wheat at $1.00 per bushel,	$510 00
905 bushels oats at 25 cents per bushel,	226 25
15 tons Hungarian hay at $8.00 per ton,	120 00
24 tons timothy hay at $8.00 per ton,	192 00
20 tons of clover hay at $6.00 per ton,	120 00
11½ bush. clover seed at $5.00 per bush.	57 50
1005 bushels corn at 22 cents per bushel,	221 10
500 bushel potatoes at 50 cts. per bushel,	250 00
Crop of one acre of sweet corn,	30 00
18 hogs at $8.00 per head,	144 00
110 pounds of wool at 35 cts. per pound,	38 50
14 lambs at $2.50 per head,	35 00
Milk,	4,682 35
Total,	$6,626 70

EXPENSES.

Two boys at $15.00 per month, -	$360 00
Three men at $300.00 per year, - -	900 00
25 tons mill feed at $15.00 per ton, -	375 00
600 bu. ear corn bought at 22 cents per bushel, - - - - -	132 00
18 bu. seed wheat at $1.00 per bushel, -	18 00
905 bushels oats raised and fed, at 25 cents per bushel, - - - -	226 25
Hungarian seed sown, - - -	6 00
Timothy and clover seed sown, - -	28 00
40 bushels seed potatoes at $1.00 per bushel, - - - - - -	40 00
Threshing and extra hands, - -	44 00
Corn 1005 bushels raised and fed, at 22 cents per bushel, - - -	221 10
24 tons timothy, 20 tons clover, 15 tons Hungarian hay, - - -	432 00
Repairs and taxes, - -	215 00
Total, - - - - -	$2,997 35

Total receipts, - - - -	$6,626 70
Total expenses, - - - -	2,997 35
Net profits, - - -	$3,629 35

B. C. STANLEY,

DAMASCONVILLE, COLUMBIANA COUNTY.

Fruit Growing — Two Methods — Reasons for Failures — Birds Our Best Friends.

FRUIT GROWING.

"Have you seen the orchard neighbor B. set out last week? I really believe he thinks he can beat me in growing fruit. He has planted out four hundred apple trees, besides several hundred peach and pear, cherry, plum, etc. Of apples he plants but ten varieties, while in my orchard, planted at the same time, and with the same number of trees, I have some fifty varieties. I think Mr. B. is missing it badly. Why, before he planted the trees, he had two teams plowing, one following after the other, 'subsoiling,' I believe he calls it; and after he got it plowed, he fooled days getting the ground ready to plant; and then again he dug such large holes for the trees. I tell you it is all nonsense, and a waste of time. I can prepare ground and plant trees three times as fast as he can. And you see he has cut the tops nearly all off, and trimmed them until they look like whip-stalks, and are nowhere by the side of mine, with nice tops, and look as though they might bear fruit next year. I intend to show him, with my list of varieties and large trees, that in ten years I will have made, or have my trees in shape to make, more money out of my orchard than he has, or will have made out of his."

SECOND PART.

It is ten years since the above orchards were planted out. The trees were procured from the same nursery, at the same time, and all were of same age and quality. I visit Mr. A, of the first part, and ask him about his orchard, fruit prospects, etc. "I see you are picking your apples."

"Well, yes; trying to get a few, but they do not amount to much."

"I believe it was ten years ago last Spring that you set your trees. You had four hundred apple, and a lot of peach, pear, cherry, etc. Where are your peach trees?"

"All gone, long ago. One-fourth of them never grew at all, were dead when I got them; the remainder dwindled along, and finally died out. I never got any thing out of them."

"Did you cultivate and tend your trees after you planted them?"

"I had oats there the first year, then seeded down, and mowed or pastured ever since. I think that the best method I could pursue with them."

"Did you ever examine them and get the borers out of them?"

"No; guess they never had any; trees never grew right. Don't think they were good. I believe the nurseryman knew they were not. I got a lot more since, and they all went the same way. Won't do any good in these parts."

"Well, how about your apple trees? How are you making it with them?"

"The apple trees have done a little better. About one-half of the trees that I first planted are alive yet, and bearing a few small apples, such as you see. They are not very good; there are a few trees of certain varieties that do much better than the others."

"How many bushels of apples have you sold from your orchard since it commenced bearing?"

"Have not sold any. I have probably had, altogether, about one hundred bushels — some good, but most of them inferior. It is not a paying investment. I have had to keep filling in with trees every year since I first planted. Some did not grow; the cattle run among them and broke some of them down. The mice girdled some, while others just seemed to dwindle away and die."

"Did you give them the same care that you gave the peach trees?"

"Yes, just the same. Lots of my neighbor's orchards go the same way. I think our land and climate are not adapted to fruit growing. It don't pay any way, and if we can get enough for home use, we do well."

THE OTHER ORCHARD.

"How about Mr. B.'s orchard, set out at the same time you set yours? Have you visited it lately?"

"I was there two years ago, in peach time. I bought some peaches of him. He had a big crop that year; guess he has had lots of peaches and apples from his orchard. I got a few bushels of apples of him last year, which were nice, and good keepers. I had to pay him sixty cents per bushel for them. I had apples at home, but mine were small, knotty, and not good for any thing. I do not see why it is he raises such nice, large, and fair fruit, while the rest of us have nothing but inferior fruit. I would like to know the secret of Mr. B.'s success."

"Come with me, and we will go over and interview him and his fruit. I know you think you have not got time to go, but just get in with me; we need not be gone over two or three hours, and probably we will learn much of interest to us both."

We arrived at Mr B.'s, found him in his orchard superintending the picking and barreling of his apples.

"I see you are busy with your fruit to-day; thought I would drop in and see how your orchard was doing. I brought neighbor A. along with me, as we wanted to get a little information on the secret of your success in tree and fruit growing."

"Am glad to see you, gentlemen. I am at home in my orchard. I have five men picking apples. I keep a general oversight, so that they do not get the different varieties mixed, and to look out that nothing but nice, smooth apples are put in the barrels. When these are full, I head them up and mark the variety. They are then ready to be sent at once to market, or to the fruit house for storage; we can talk and attend to this all at the same time."

"How many bushels will you have this Fall?"

"Well, there are four hundred trees; of these there are four varieties of forty trees each, making one hundred and sixty trees. There is not a full crop this year. They will only average about two bushels to the tree, or three hundred and twenty bushels. The remaining two hundred and forty trees will average five bushels to the tree, or one thousand two hundred bushels. Add these to the three hundred and twenty bushels, and I have one thousand five hundred and twenty bushels from the four hundred trees."

"What are they worth per bushel, or barrel?"

"I sold one thousand bushels, the purchaser furnishing the barrels and taking them from the orchard. He paid me fifty-five cents per bushel for them. I pay my pickers five cents a bushel for picking and putting in the barrels. I head them up; that leaves me just fifty cents per bushel, after paying for picking, but I do not count for my time heading up, etc."

"Those you are storing are as good as what you are selling, are they?"

"Certainly, just the same."

"Then your income from your orchard this year will amount to, on apples sold, five hundred and fifty dollars; apples stored away, five hundred and twenty bushels, at fifty-five cents per bushel, two hundred and eighty-six dollars; added to the five hundred and fifty dollars, gives eight hundred and thirty-six dollars. Now if you deduct cost of picking, at five cents per bushel, you have seven hundred and sixty dollars. You say the small and faulty apples made up into cider will net you about forty dollars more, leaving the profits of the orchard this year at eight hundred dollars. And I see your trees are nice and thrifty, and look as though they might continue to bear for a lifetime yet. With a gradual increase in size, the profits from them will also increase. You are satisfied, then, that fruit growing pays?"

"Yes, sir, if a man understands what he is going at, and gives it proper attention. So many fail simply because they exercise no judgment in the matter. They think that any

ignoramus can plant trees and raise fruit. There is where the first mistake lies. The wants of the trees must be studied from the time you get them from the nursery, all through their different stages of growth. In the first place you must exercise judgment in selecting varieties. Post yourself in this matter, either by visiting the nearest bearing orchards, and obtaining what information you can as to what succeeds best and the kind of soil that has been planted on; or, if there is no orchard near you that is bearing, send and get your State Horticultural Report and study it well. You will get a vast amount of information from it.

"Go to your nearest bookstore and spend a dollar or two for some work on fruit growing. If there is no such work there have one sent for. Or, if you are not able to do this, as a last resort, let the nurseryman select your varieties. You must tell him the kind of soil you are going to plant in. Give him the number of Summer, Fall, and Winter varieties you want.

"Here let me say, if you want to raise apples to sell and make money, plant almost exclusively of good sized and late-keeping Winter varieties. My orchard is all Winter varieties but forty trees. But other things are essential besides varieties.

"First, select your location for the orchard. From observation and experience, I would say let your ground be naturally dry, with a north or northwest exposure. Never plant on a south, or southeast exposure, if you can possibly avoid it. I know many advocate a south or southeast exposure as being the best, and give as their reason that the soil is warm, trees start earlier, etc. But you do not want your trees to start early in Spring, and then have the buds killed by Spring frosts. Neither do you want the sap started during the warm spells of weather that sometimes come during the Winter months. On the contrary, you want them kept back in Winter, and as late in the Spring as you can hold them back. The cold winds from the north or northwest will hurt your trees far less than the hot sun. Your location settled, next prepare your ground thoroughly. Work it up deep. Most soils will pay to subsoil. Before you plant, make good-sized holes, so as to spread the

roots out nicely. If any of the larger roots are broken or badly bruised, take a sharp knife and cut them smooth. Trim the tops, and always keep them nicely balanced by cutting out here and there as they need it. Get your trees in rows to range nicely when planting. It adds much to the appearance of an orchard, and also makes it easier to work among."

"What distance apart would you plant?"

"Well, climate and soil have much to do in this matter. I would never plant closer than eighteen feet each way, and there is no necessity for farther than thirty-two feet. I plant twenty-eight by thirty feet. Out on the open prairie I would plant a little closer. You must cultivate your trees for four or five years after planting. I raise corn the first year. After that, potatoes, or other hoed crops, not forgetting to feed soil with barnyard or other fertilizers if needed. I watch carefully every year for any kind of borers that are apt to get about the roots and trunk of the trees, and cut them out with a sharp knife. Wash the bodies of the trees occasionally with strong soapsuds. I do not allow any kind of rubbish to accumulate against the body of the tree, to make harbors for mice, as they will be sure to girdle and kill some of the trees in the Winter months. I never allow the sportsman, with dog and gun, to kill any kind of birds, except it be hawks and owls; for the birds are the best friends I have if I want fine fruit. They destroy millions of insects and worms annually, that otherwise would prey upon the trees and fruit. I invite the feathered songsters every way to stay around my orchard. I plant some evergreens around. I have found it an excellent plan in Winter to scatter some wheat screenings, or seeds of some kind, around in the orchard. By such means I make it attractive to the birds the year round, and it well repays me. They may occasionally pick a few apples, but they save fifty where they pick one.

"When my orchard was five years old, I sowed it down to clover, and if not too heavy, cut it and let it lie and rot on the ground. This is my method of treating trees. I seldom lose any. Of the four hundred first planted, I have lost about

thirty, which I replaced with others. Trees need to be watched and cared for, and they repay for time and expense, provided we have the right varieties. The same treatment holds good with peaches as well as apples. But if trees are neglected, if cattle run among them, they will break and destroy them, and soon the orchard is gone. I would say, plant trees, and then take care of them, and you will be satisfied with the results."

HARVEY ROBB,

MIDDLEFIELD, GEAUGA COUNTY.

Soil — Cattle — Sheep — Horses — Hogs — Fruit — Fertilizers — Buildings.

My farm is situated on the east and west center road, and consists of two hundred and fifteen acres, about one-third south and two-thirds north of the road, the whole tract being of oblong form.

SOIL.

The soil is of a sandy loam, with a very slight admixture of clay. My farm is about three-quarters rolling upland and about one-quarter bottom land.

PASTURE AND PLOW LAND.

I have one hundred acres in cattle pasture, besides three small pastures. I mow about forty acres annually. I have three plowed lots of about eight acres each, on which I raise wheat, corn and oats, and twenty-six acres of woodland.

METHOD OF CULTIVATION.

I break up about eight acres for corn. The Spring following sow it to oats, and in the Fall I plow under the oat stubble and sow to wheat and seed down to timothy and clover, which

I consider makes a convenient and perhaps judicious rotation of crops.

FERTILIZERS.

I depend very largely for fertilizers on my stock and barnyard. I have, however, used some of what is known as Cleveland phosphate, but found little advantage from its use. I prefer home made, from the barn. In applying manure I cover my corn ground well, and plow it under. Then I keep what is left until Fall, to apply to my wheat or to top dress it. As the result of this kind of farming I raise yearly, from eighty to one hundred bushels of ears of corn per acre, fifty to sixty bushels of oats per acre, and about twenty bushels of wheat, on an average. This is probably above the average crops of grain raised by farmers generally, as this county is better adapted to stock raising and dairying than it is to grain.

CATTLE.

For the last two years I have kept eighteen to twenty cows. I use about half this number to raise calves, and the remainder I milk and send their product to the factory. My profits from sending milk to the factory for the last two years, have been small, but when I receive ten cents per pound for cheese, it pays well.

I raise Short-Horn grades. I usually raise ten or twelve calves each year. My practice is to let them suck night and morning, giving a good cow two calves and a young cow but one. Thus I raise some very fine animals, and find that it pays much better than sending milk to the factory.

SHEEP.

At present I am not engaged in sheep raising. Formerly I kept from one hundred and fifty to three hundred sheep, a cross of the Leicester and Merino. This cross produced a good hardy sheep, and a good wool clip.

HORSES.

I am not a "fast horse" man, but I do like a pair that can do a good day's work on the farm, and get up and off when on

the road. I have such a pair of dapple grays, that weigh about thirteen hundred pounds each, and they can make it lively sometimes.

BERKSHIRES.

The Berkshire breed of hogs is the best that I ever tried, and I keep that breed.

FOWLS.

I keep bronze turkeys and buff Cochin chicks.

FRUIT.

I have only sufficient fruit for home use, such as apples, peaches, grapes, etc., and all of the usual varieties.

FENCING.

For fencing, I like rail fence; but have some board fence of white oak boards one inch thick, six inches wide, four boards. The fence is four feet high.

I CARRY ON THE FARM

with the help of one man, whom I hire for eight months at fifteen dollars per month, and have him a few days extra in haying time at one dollar and twenty-five cents per day.

WELL WATERED.

My farm is well watered by a never failing brook, running in a southwest direction, across the eastern part of the farm. There is also a fine spring near the house, which runs north till it intersects the brook. Neither dry weather nor cold affects this spring.

BUILDINGS.

In 1877 I built a substantial and well arranged barn, forty by fifty-eight feet, eighteen feet posts, and basement. A bay at each end is seventeen feet deep, with two floors in the middle twelve feet each. When the bays are filled, I fill one floor, which is the same as one of the bays, thirty-nine by forty feet, so there is no waste room above. In the basement there are three stables, two of them having eleven stanchions in each, the other is cut up into five box stalls, with two cattle in each, which are tied up. The three stables hold thirty-two head of

large cattle. The floor is cemented, with drains through the whole of it, two inches deep and fourteen inches wide, which catches all the droppings and liquid manure. When the manure is wheeled out in the morning, a little sawdust is put in the drains, which saves it in good order. I have a good well in the basement.

DWELLING HOUSE.

My house was all built by the day, as I did not want any job work done, nor any poor materials used. I have another barn across the road from the house, for the use of horses and calves. I have a building near the milking yard, which I formerly used as a cheese house, but now I keep it for a shop. I have a granary fourteen by twenty feet, but it is not large enough for my wheat, corn and oats.

O. WILCOX,

HINCKLEY, MEDINA COUNTY.

The Profit in a Small Farm — Fruit — Onions — Stock — Sheep.

I have a small farm of twenty acres, located in Hinckley, Medina county, Ohio. The country here is quite rolling. The soil is a clay loam, well adapted to grazing and meadows. But a large proportion of it has, through bad management, become much degenerated, and hardly pays two per cent. on the money invested.

I propose to tell you how I have supported my father, mother, wife, and one child on twenty acres, and have been improving the land and buildings all the time.

My farm is nearly square, and divided so that I have five two acre lots for general purposes; from two and a half to three acres in wood, two acres in orchards, and one acre in small

fruits, raspberries, strawberries, and blackberries. The balance is taken up with buildings, yard, garden, and highway.

ROTATION.

With the five two acre lots first mentioned, I practice the following rotation: The first year I plow under a clover sod, generally without manure, except on some poor spots. I then plant to corn, using a planter, and planting three and a half feet apart each way. Last year I used a horse planter only, rowing the corn one way; but I don't like that method as well, as it is much more work to tend it, and I don't think the yield was any better. As soon as the corn is large enough to see the rows plainly, I start the cultivator, and unless the weather is very wet, seldom have to use the hoe. I generally get from eighty to one hundred bushels of ears to the acre of the yellow corn, a rather large variety, which I have greatly improved by careful selection of seed.

The second year I plant one-half the same piece to potatoes, mostly of the early and late Rose varieties, although next year I shall plant the Beauty of Hebron in place of the Early Rose. I plant them in drills three feet apart, marking out furrows with a small plow, dropping the seed, which has been previously cut, and covering it with the cultivator with the teeth reversed. When the potatoes begin to peep through the ground, I put on the harrow and give them a thorough harrowing. Then after a few days I cultivate them. I keep them cultivated until they are in blossom, and then lay them by. The usual yield is from ninety to one hundred and twenty-five bushels. The balance of my lot I sow to oats, and they yield from forty to fifty bushels. As soon as the oats are off the ground, I plow for wheat. After plowing, manure is spread evenly over the surface and harrowed in. The early potatoes are also dug, and the ground fitted in the same manner. The ground I stir frequently until about the tenth of September, when the wheat is sown with a drill, also putting on one hundred pounds of superphosphate to the acre, to start the wheat in the Fall. Where the late potatoes were, I sow to oats in the

Spring, and seed the whole to clover. The clover I mow for two years, and then turn under for corn again. The first crop is mown for hay, and the second either pastured or mown for seed. Thus I have a five years' rotation, one year corn, second potatoes and oats, third wheat, fourth and fifth clover, manuring once only in the five years; yet the land is constantly improving in fertility.

FRUITS.

I have about two acres in orchard, of mixed varieties, but don't think it very profitable here. I have also about a quarter of an acre in strawberries, mostly of the Wilson variety, with some Jucunda, Col. Cheney, Sterling, and Capt. Jack. They are set in rows about three feet apart, and in the rows are allowed to run together. In the Fall I cover with straw to protect them from heaving, and do not touch them in the Spring until after fruiting. They will yield from forty to sixty bushels, and are worth about one dollar and a half per bushel here, or one dollar and seventy-five cents to two dollars in Akron.

RASPBERRIES.

I have also three-quarters of an acre of raspberries, mostly Doolittle's and Black Caps, which seem to do the best. I have tried the Mammoth Cluster, but they do not endure as long as the Doolittles. They are set in rows six feet apart, and three feet in the row. The new canes are pinched back when they are two feet high, to make the bushes more stocky. They will yield from forty to fifty bushels, and bring in Akron two dollars per bushel. I don't think that there is much profit in raspberries at that price, and at our distance from market. Lawton blackberries pay very well, when they don't Winter kill, which is about every other year. They will bear with but very little cultivation.

GARDEN.

As to the garden, I generally sow onions enough to produce thirty to sixty bushels. For them I plow the ground in the Fall, and manure with well rotted manure; and in the

Spring I harrow the ground well, then rake off by hand and sow the seed with a drill, keep them clean, and about the first of August drill turnip seed between the rows, which gives two crops from the same ground. I also raise some cabbage, celery, Russian turnips, beans, peas, etc., enough for my own use and some to spare.

STOCK.

For stock I keep two good grade Short-Horn cows. I calculate to raise one calf each year, and to turn one cow off, either for a milker or for beef, annually. I find it as profitable to milk in the Winter as in the Summer, as I keep my cows up any way until after haying, cutting clover for them when it is large enough, and buying some old straw stack for bedding, thus making a large quantity of manure.

SHEEP.

I also keep from five to ten sheep, to keep down the briars in my wood lot. The sheep I change quite often, buying a few culls from large flocks, and putting them by themselves. They soon improve so as to bring a good price.

HOGS.

I also keep quite a number of hogs. Generally have one or two sows, and raise pigs to sell whenever I get a chance. From the time they are four weeks until they are six months old, I find they pay well. I buy from one to two tons of shorts in the course of the year to feed to the cows and pigs. I keep one good horse, and sometimes for a short time two, and by watching things closely and working hard, I manage to do well on a small farm.

N. TALCOTT,

JEFFERSON, ASHTABULA COUNTY.

Stock — Making Sugar — Buildings — Results.

STOCK FARM.

My farm contains one hundred and sixty acres, forty of which are timber—beech, maple and white wood. I have a nice white maple, or hard maple, sugar orchard of about four hundred trees. I now use three hundred of them every season for this purpose. I make the purest sweet ever known to man. My mode of conducting this business is very simple, cheap and economical. I do no work for the fun of it alone, but aim in all things to do it well; and the higher culture I give to all my farm operations, the better my returns.

My timber land and all my farm is in three gentle rolling ridges. I have no waste land or need of underdrains. The woods are as nice every Spring to make sugar in as it is possible to have clay soil.

MAKING MAPLE SUGAR.

I use heavy tin buckets, flaring a little. They hold eleven quarts each, and have a hole near the top of each to hang them on the sap spout. The spouts are made of tin. I have tin covers for all my buckets that go over the spout and bucket, so that no impurities can ever get to my sap. It is then kept gathered up close, and never allowed to sour in the buckets. I store it in a galvanized iron cistern that holds twenty barrels. I draw from this by a faucet a steady stream of sap into a galvanized iron pan heater, placed on a brick arch. My hot sap from this heater flows continually into another larger pan, thirty-two by eighty-two inches, six inches deep, set a little lower on the arch. I sirup off a batch every three hours, because sap needs to be converted into molasses as rapidly as

possible, and made fresh, as the flavor is spoiled if it gets the least bit sour, or is boiled too much. The utensils should all be made of tin and galvanized iron or copper, and be kept clean and pure all the time. My sap bush has never returned me less than one hundred dollars per year yet. I generally receive about one hundred and fifty dollars for choice maple sirup, sold at from one dollar to one dollar and twenty-five cents per gallon. It requires two hands to work the bush, and they average twenty days' work each, also a team. The wood I use is always waste wood, prepared the Summer before, and hauled up to my sugar house, which is sixteen by twenty-four feet, containing all the fixtures necessary to do this work, night or day, with comfort and ease. My building and entire outfit only cost about two hundred and fifty dollars, and will last twenty years or more. My work in expense never amounts to more than fifty dollars, and is done at a time of the year when nothing else but chores can possibly be done to good advantage. I always keep for table use, from twenty to thirty gallons of sirup, besides about two hundred pounds of sugar, and I sell from one to two hundred dollars worth of sirup. I made over two hundred gallons last year from three hundred trees.

CATTLE.

My main branch of farming is breeding Short-Horn Durhams. I commenced this business nine years ago, with three cows and heifers, and have sold the male increase and a few of the females, always about as soon as weaned. I have received thus far, over fourteen hundred dollars. Previous to this I was engaged for many years in fine wool sheep husbandry, and from that went into dairy farming, but I have gradually worked out of that the last four years, and am now in the stock business exclusively.

My former business was always very successful, for the amount invested, always paying me full ten per cent. per annum, for about ten thousand dollars invested in a farm and fixtures. It has been as high as fifteen per cent. net some years.

STOCK BARN.

My main stock barn is forty feet wide, fifty feet long, and runs east and west. It is a good, high, two story barn. My stable floors are very heavy, as my cows weigh from sixteen to eighteen hundred pounds each. I use stanchions, and have twelve on each side, giving ample room for these large animals. My barn is boarded up and down, with bats over the joints, planed, and painted with yellow ochre, and made warm and comfortable.

CATTLE YARD.

I have a two acre barn yard, with a fresh spring in it a few rods north of the barn, and on pleasant days I let the cattle run here and to the spring for water. But nearly all the time they are kept in a yard south of the main barn, entirely enclosed with shed and other barns, to prevent the cold wind beating upon them from any direction. In the center of this yard I have a large straw stack, to keep the cattle busy, and it affords them a chance to rub and lick themselves. They gather round this, and also eat a little of it each day. They scatter considerably more, and make lots of manure in the yard. This yard is fifty by sixty feet, and is amply large to herd twenty cows and save all the manure.

SHEEP BARN.

I have a little sheep barn that forms a part of one side of the yard. It is sixteen by thirty-six feet. My horse barn is on the other side, and is eighteen by thirty-two feet, with ten feet shed roof. The roofs all run outside, so no water is allowed to run from the eaves on barns or sheds into the yard, as I have eave spouts on the barns to prevent this. I have a well near the end of the main barn, and if it is very stormy weather, I can pump water, letting it run into a tin trough through the barn. The cattle can drink without moving from the stable stall. There is another water trough in the yard, for the same purpose. I have the cattle cleaned off once a day, with a cattle card, and feed them hay, steamed, or corn fodder, all they will eat up clean. Then I give them a two-quart measure

full of corn and oats ground in equal parts, twice a day. I never have a sick animal or a poor one, and always sell before any trouble comes upon me in consequence of old age of my animals.

GOOD STOCK.

My stock are always nice. I get the red ribbons at our fairs, and others call me lucky, but there is no such thing as luck. Do your work well, use good judgment in breeding, aim to get good stock to begin with, and make each new crop better, if possible.

My other farm stock are a few herd of sheep, horses, and colts, and poultry, in about the usual quantity which farmers generally keep.

COWS.

I have four good grade cows for milk and butter. Any of them will give over forty pounds of milk per day on an average, and of good quality in June, and make full two hundred pounds of butter per head each season. I have made my whole dairy average over five thousand pounds of milk per cow, when sending to our cheese factories; but it requires good cows, good pastures, and extra feed in all months but part of May, June, and part of July.

FEEDING MILCH COWS.

I change the feed for milch cows, from chop feed, as before stated, to bran; as cold weather comes on I commence with the ground corn and oats again. I can not raise crops on my old clay farm, which has been in use constantly for seventy years, unless I give it high cultivation and plenty of fertilizers.

GRAIN.

I make no specialty of any other kind of farming. I keep about six acres each of corn, oats, and wheat each year, using this rotation, manuring corn in hill or with phosphates, one barrel to the acre. Also on my oats I use one barrel of phosphate to the acre, and drill them in with phosphate drill.

I always stock my land with the wheat crop, and use all the manure I can make on the farm each year with this crop,

and usually plow it under. I seed with ten quarts timothy and four of clover per acre, generally in March.

IMPLEMENTS.

I have a Buckeye Mower, and the latest style side delivery reaper. I can use cast iron plows in my soil as well as steel. I keep my farm tools always under shelter in the barns or sheds, and never allow any thing to go to waste through neglect.

KEEPING ACCOUNTS.

I keep one good hired man the year around, at fifteen dollars per month, and hire an extra hand in harvest, and a little in planting. If my own boys are busy in school, I have to get some one to help in the sugar season; but this extra work rarely ever reaches the sum of fifty dollars per year. This money paid for work, my taxes and repairs, and loss by wear on farm implements, constitute my expense account. I pay nothing out for stock. I give the farm credit for my butter, milk, vegetables, meat, poultry, eggs, firewood, proceeds of the sale of cattle, horses, sheep, milk, butter, wood, timber, stone, maple sugar, grain, and every thing else the farm turns off, after deducting all expenses. I know just what it earns each year. I do no work on the farm myself, save the chores night and morning, but plan it all and set my men to work before breakfast. I reside on my farm, but have a hardware store, banking house, and flouring mill near at hand, which occupy all my time during business hours, and have done so for twenty years. But for fifteen years the farm has paid the best per cent. on the investment of any of my enterprises.

I have never yet found a farmer who would correctly represent the true earnings of a farm. They eat up half or more they raise, and give no credit for it, and then, after this is wrongfully deducted out of it, report the per cent. the farm earns. A merchant, mechanic, or laboring man, has to pay for every such thing out of his earnings, and it then figures against him; and there is no good reason why the same rule is not good on the farm.

Our farm lands in Ashtabula county, Ohio, bordering the

lake for three or four miles wide, are sandy, and well adapted to fruit and small garden culture. On these sand ridges the land is valuable, averaging from seventy-five to one hundred dollars per acre. Back of this for twenty miles it is mostly clay or gravelly soil, stony land, susceptible of high culture, and good grass land. It was originally heavily timbered with beech, maple, ash, white wood, and a little oak and hemlock in some places. The main business of this county for years has been butter and cheese, and stock raising. These improved farms range in price from twenty to fifty dollars per acre, and pay good returns if properly managed.

D. W. H. HOWARD,

WASEON, FULTON COUNTY.

Profit of Sheep — Under Drainage.

SITUATION OF FARM.

My farm has four hundred acres, which are mostly black land, with clay subsoil. A ridge of high land runs through it, furnishing springs (or what answers for them) in abundance. I have excavated several pools of one-half to three-quarter acres extent in each, at a depth of five to six feet, which furnish pure, cool water for stock. As they are shaded with maple trees, which I planted on their borders, stock have cool places for standing when the weather is hot. They often stand up to the belly in water.

STOCK.

I have kept forty head of cattle and horses, and one thousand sheep on my place for many years. I do not house my animals in Winter, but have plenty of open sheds in convenient places (usually in the edge of the timber), where they can go in and out at pleasure, feeding hay and corn fodder on dry ground. My sheep are fed in wet weather in open box

racks, having the same liberty of the sheds as do the cattle; but they do not run with them.

SHEEP PROFITABLE.

From 1850 to 1865 I kept horned cattle alone, and found them very profitable; but in 1865 I changed to the Merino sheep, and have continued in the business ever since. I find no branch of agriculture in this part of our country so profitable as the growing of fine wool.

My wethers shear five to nine pounds, and my ewes three to five pounds of clean washed wool. The price ranges from thirty-five to forty cents per pound.

FINE WOOL.

In the Fall of 1863, I let to a neighbor six fine wool ewes for a term of four years, I to receive annually half the wool shorn, and at the expiration of the term I was to have half the increase. Having a curiosity to know how the venture would "pan out," I kept a strict account of sales of wool, both of the lease and my own, and of what mutton was sold. At the end of four years we sold the entire flock, which, with the amount of previous sales of wool, etc., produced the aggregate sum of three hundred and sixty-six dollars and sixty cents. This result seems large, but it is nevertheless true.

Of course, unusual care and good luck were given to the flock, or such results could not have been obtained. Wool and sheep were high, the wool bringing from sixty cents to one dollar per pound, and the sheep three dollars to five dollars per head.

UNDERDRAINING.

I am now underdraining my land, and find a great improvement in the amount of products. I use for all small and lateral, two and a half to three inch tile, and mains four to eight inch tile. The cost of these tile (at the kilns) is eight, ten, fifteen, and forty dollars per thousand, and for laying, sixteen to twenty cents per rod, including the digging, laying tile, and filling ditch.

JAMES McDOWELL,

CANTON, STARK COUNTY.

Pasture — Rotation — Short-Horns — Sheep — Barn and Racks.

LOCUST GROVE FARM.

My farm proper contains one hundred and sixty acres, divided as follows: One hundred and twenty acres are cleared land, and forty acres are timber, consisting principally of white oak, chestnut, hickory, maple, and locust.

PASTURAGE.

In one-half of my timber the small underbrush, such as dogwood, ironwood, etc., is all trimmed out, the result of which is that a fine natural growth of blue and spear grass covers my ground, furnishing the best pasturage for sheep, while it seems to be no detriment to the larger growth of timber, but leaves it to the farm, with all the advantages of protection and beauty.

The remainder of the timber is left as Nature cares for it, and stock are not allowed to run through it. As it is cut down or dies out, a younger growth fills its place.

ROTATION OF CROPS.

My land which is cleared I have divided into ten acre fields, for convenience in pasturing and rotation of crops, about as follows: I sow wheat, corn, oats or barley; wheat with clover and timothy seed, to cut for hay the following one or two years, rotating in the order named, then pasturing from three to five years. My practice has been to fallow stiff sod in July or August, and after stirring it well, seed in wheat from the twelfth to the twentieth of September. During the Fall and Winter months following after I harvest the wheat, I haul the barnyard manure, and spread it as hauled evenly over

the field. The following Spring the field is plowed, put in good condition, and planted in corn in hills three and a half feet apart each way, and three grains in a hill. By this means I have no grub and cut worms, and a good crop has always been the result. I plow up the same field the following Spring, and it is in good condition for oats or barley; after harvesting the oats or barley, the same field is again turned over and seeded with wheat, clover, and timothy seed, and either top dressed with lime or manure. I prefer the lime generally.

The best time to apply it is when seeding down to grass, although for hill fields that lie exposed to Winter winds, a top dressing has proved very beneficial, as a protection to the wheat plants during Winter and early Spring, and adds largely to the early start of the young wheat plants where the soil is thin or light. I cultivate twenty to thirty acres wheat, ten to twenty acres in corn, ten to twenty acres in oats or barley, and I cut thirty acres of grass, clover, and timothy mixed. The average yield of wheat is twenty-five to forty-five bushels per acre; of corn, one hundred to one hundred and fifty bushels per acre; oats, fifty to seventy bushels per acre. The number of bushels of grain raised per acre is gradually increasing, after forty odd years of continuous farming.

SHORT-HORNS.

I have thorough-bred Short-Horns, as they are the most profitable with me, on account of their beef producing qualities, as well as their tendency to mature early for beef. I find that by careful selection and proper breeding, the heifers can be bred to produce fine milking qualities, and sold when fresh in milk at three or four years old, at remunerative rates. I keep from twenty to thirty head.

SHEEP.

I have bred my sheep from the W. R. Dickison flock, purchased by him from the Col. Humphrey's importation of 1802, of pure Spanish Merinos, which have been under my management since the death of W. R. Dickison, in 1832. I keep a

flock averaging from four hundred to five hundred. The ewes, when in good condition, weigh from eighty to one hundred and twenty pounds. I raise and sell largely for stock breeding purposes, those weighing from one hundred to one hundred and seventy-five pounds. The whole flock produces, on an average, from five to six pounds of XX to XXX brook washed wool, of good staple, and free from gum. As the grade is noted for its evenness, length and fineness of staple, as well as quality, this makes one of the best flocks in the State, and it is the only remaining thorough-bred flock of that part of the Col. Humphrey's importation of 1802.

SHEEP BARN.

My plan for a barn for sheep is as follows: I built one sixty by thirty-two feet ground plan, for three hundred sheep, with single racks on the sides, and two rows of double racks, so placed lengthwise as to divide the whole barn into three stables of equal size, and wide doors at each end of each stable. The double racks are made by using two-inch planks, fourteen inches wide, twelve feet long, and I nail on the sides a four inch board, making a trough two inches deep, as in cut No. 1.

FIGURE 1.—End View.

To divide the trough, I take four-inch boards twelve feet long, and place them in the form of an inverted V, as in figure 2, nailing all securely together.

FIGURE 2.—End View.

To make the rack, I bore half-inch holes, three inches apart, along the rack, in the boards making the inverted V. I fill with rungs twelve inches long, and cap with a board one foot wide, with holes bored in the lower edge to fit the rungs, as in figure 3. I cap the ends well by nailing a plank on each

end from the top to the bottom plank, and it makes an excellent sheep rack.

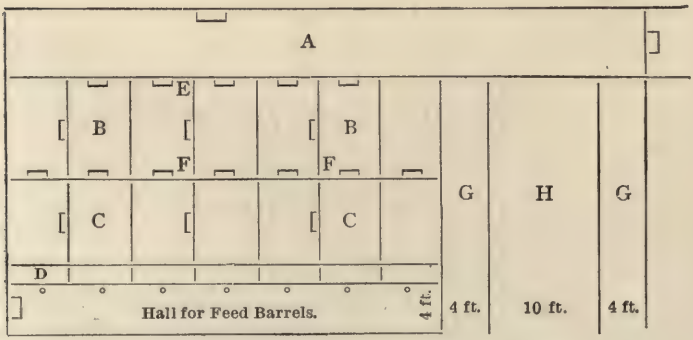
FIGURE 3.—End View.

This size of barn should have twenty foot corner posts, and by having the center racks movable, and folding doors at each side, the mows can be filled by driving through the center. The mows are thus large enough to hold all the feed necessary for three hundred sheep during the Winter.

A. H. WRENN,

MOUNT GILEAD, MORROW COUNTY.

Plan for a Hog House, Hen House and Barn — Results of Experiments — Sheep — Hogs.



In the above plat is the ground floor for a hog house and corn crib attached, which can be raised to any desired hight. Corn and feed can be stored in upper part of hog house. If

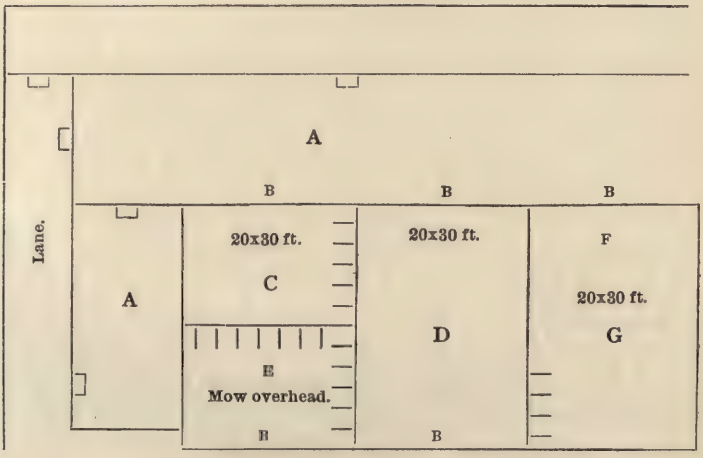
raised as high as corn crib and all under one roof, the entire length of building for hog house and corn crib will be forty feet, and twenty-two feet deep. The advantage of such a constructed hog house, is that the sleeping and eating apartments are separate, each space being large enough for a sow with a litter of pigs, or for several other hogs. Hogs of different sizes can be kept with convenience, and all fed from the same feed room. A, is a lane through the farm, where the hogs can be let in through the slide doors. A hog yard, across the lane, can be attached. B B, are six by ten sleeping rooms; C C, are six by eight feeding rooms; D, is trough opening, made in side of hall to get feed in; E, troughs; F F, are slides, size to suit convenience; G G, corn cribs; H, wagon shed. The whole can be set on posts, to guard from rats, or otherwise, as desired. The lower timbers ought to be six inches square; corner posts, four or five inches square; lower floor, one and one-half or two inch plank; the remainder, one inch boards and two by four scantling.

Much has been said and written relative to the kind of feed, how prepared, where fed, etc. Experience shows the greatest waste is throwing whole corn in the mud to swine. Nearly one-fourth can be saved by having a dry, warm place for them to eat and sleep, also nearly another fourth is saved by feeding ground feed, and in addition hogs will be healthier, as well as take on fat faster. It is also advisable to keep before hogs in pens, dry clay, charcoal, and occasionally sulphur, copperas and salt.

The above is a form for a poultry house, twelve by twenty feet. A, nests built two feet from ground, second tier of nests above, if wanted; B, door for entry; C, poultry yard, to be

made as large as required, lower story should be six feet, second story six feet, with roosting places. If breeds want to be kept separate, divisions can be made in both stories to suit.

It is ascertained from experience that gravel, lime, charcoal and clear water are all needed for the fowls to have health, and to be productive, and in order for an abundance of eggs in the Winter (which is the great profit), they should have a change of feed, such as corn, oats, rye, screenings, etc., and occasionally ground feed, given warm; to supply the place of worms, flesh of some sort should be given; to supply the place of Summer herbage, scraps of cabbage, different vegetables, and young growth of hay, cut and steamed, mixed with bran or meal.



The above is my plan of a barn, sixty by thirty, and sixteen feet posts. A, is barn yard; B, doors; C and G, stabling, which can be made with the mangers as desired; D, threshing floor; F, grain bins; E, mows over head.

If convenient for a bank barn, of course the stabling can be below the above, and leave the spaces for storage, grain bins, etc., etc.

Space is made for barn yards on side and ends of barns.

Wells for water are in either yard, and a windmill pump attached.

EXPERIMENTS.

I tried what could be done with a town lot of the fourth of an acre. It being yellow clay and lying high, it did not for several years pay to work as it scarcely would raise white beans. Spring of 1879, I put on six loads of stable manure, plowed under, and planted in early potatoes. The season being very dry, the manure did but little good, if any. After the potatoes were dug, the ground was plowed up and made very mellow. About the first of September, sowed it to rye, and put on one hundred pounds bone dust, with its bulk of damp ashes, all harrowed in together. There were frequent showers of rain during the Fall. In seven weeks from the time of sowing, the rye was sixteen to eighteen inches in length, and much of it down. At this writing, December 22d, it is a perfect mat, not an inch of ground to be seen, and is as green as crops any time in Spring. The calculation is to plow the rye under in Spring, which I think will be a very cheap way to get worn-out land into a good state to raise any kind of a crop.

ANOTHER.

About the first of September, 1879, about the sixth of an acre, part of a public square in this place (Mt. Gilead, O.) was being prepared to sow to grass. It had been filled in with yellow clay from banks. My opinion was asked what to do; I advised fine pulverizing, to sow on a peck of blue grass seed, fifty pounds of bone dust, and give a light covering of barn-yard manure. The above was carried out except as to the manure, which was too light; the ground could be seen too easily. The result: At seven weeks' growth the grass was from eight to ten inches high, ground completely covered, and it is at this time very green and in a mat. Have seen a year's growth on a good quality of ground not as good as the above.

I have tried bone dust on wheat, corn, meadows, pastures, and different garden vegetables, and in every instance consider the bone dust a cheaper and quicker fertilizer at from thirty to thirty-five dollars per ton, than barn-yard manure as a

gift, if it has to be hauled one mile; and I think it will last as long as barn-yard manure. But where the soil is very heavy, coarse barn-yard manure is an advantage. If the land is devoid of lime, burnt lime will be an advantage. Where bone dust or the superphosphate is put on wheat, meadows, or pastures, I think it a good plan to sow land plaster in the Spring. Amount of land plaster per acre, from one hundred to two hundred pounds. Amount of bone dust per acre, from two hundred to four hundred pounds.

SHEEP.

This is called a good wool county. The largest portion is the Merinos and the grades. They have been improved from sixty and seventy-five pound carcasses to ninety and one hundred pounds, and from fleeces of from three to four pounds to five and six pounds washed on the sheep. A few have introduced the Cotswold and Leicesters, but only in small flocks. Some are crossed with the Merinos, which improves the wool and increases the weight in mutton, and commands a higher price per pound in wool and mutton than the pure fine greasy stock. There is also an occasional small flock of South-Downs, which give satisfaction to the owner, but don't seem to come into market very fast. A few years ago the foot rot and scab was prevalent; stockmen resorted to many remedies, but the most effectual remedy was to pelt the sheep. Thousands were treated in that way. It is seldom now that we hear of the diseases. It is calculated, take one year with another, that wool can be produced for twenty-five cents per pound.

HOGS.

The old Wood breed is extinct, and where it used to take two years to make a two hundred pound hog, a three hundred and four hundred pound hog can be made in nine to twelve months. The breeds are the Suffolk, Chester Whites, Magies, Berkshire, etc. They all have their admirers. Many prefer the last named, and there are many want none but the two first named crossed, one to give bone and size, the other to put on flesh.

SOLOMON J. WOOLEY,

HILLIARD, FRANKLIN COUNTY.

Tiling — How to Make Drains — Depth — Laterals — Velocity of Water — Cost of Draining per Acre — Pastures — Cattle — Sheep — Hogs — Horses — Rotation of Crops — Manures.

APPLEDALE FARM.

Twenty-three years ago I came to what was then the wettest and most neglected portion of Franklin county, and purchased six hundred acres of heavily timbered swamp land. I deadened four hundred acres at once, and in the course of time rented to all who wanted, from twenty to forty acres of land for the term of five years, with the understanding that at the expiration of the lease the land was all to be cleared of timber.

TILING.

I at once commenced a system of drainage, which I have continued ever since, draining with tile as I had the money to spare, always laying the tile myself, and making sure that every tile was laid exactly right.

Although there are fifteen miles of tile drains on my farm, the low, wet and swaley lands have been drained with round tile (which I consider the best), at a depth of from three to six feet, and some of the dry land at a depth of from three to four feet, and laid from six to eight rods apart. On the black, wet, swaley land, it has paid many fold, while on the clay land, my most sanguine expectations have been more than realized.

HOW TO MAKE DRAINS.

The distance between drains must be determined by the nature of the soil, their depth, and the amount of fall. A loose, porous soil will permit water to reach the drains for a long distance, while a tough, compact clay is almost impervious

to water, and requires them to be made much nearer. In a black, loose soil, drains at the depth of four feet are sufficient at a distance of ten rods apart; but, if the land is a hard-pan or a stiff clay, to drain it thoroughly the distance apart should be from four to six rods.

But few persons realize the great advantage that deep drains have over shallow ones. In my extensive acquaintance among drainers, I know of but few that drain to a depth averaging over one and a half to three feet, whereas a depth of three to eight feet should always be obtained. An orchard or vineyard, for example, should never be drained less than eight feet deep. The time is probably not far distant when shallow drains will be taken up and put down again at a proper depth. Persons often say that it costs too much to drain so deep, when the fact is the cost is less. For instance, it would cost but very little more to dig two drains to the depth of four feet than it would do dig three to the depth of two and a half feet, and the two deep drains will drain fully as much land as the three shallow, and will drain it much better and save the expense of the third line of tile.

BUT THE DEPTH OF DRAINS

is not always a matter of choice, as very often the outlet is not sufficient, and I have very often noticed that persons are sometimes extremely contrary about giving their neighbors above them an outlet. In making an improvement of this kind, that is to last for all time to come, it is much better to secure a good outlet in the first place, if it does cost something more, especially if the land is flat and you have but little fall; but in all cases it is best to have a good outlet so that the water will fall from six to twelve inches when it leaves the tile. However, a tile drain that is properly made will not fill up; if the outlet does fill up fifteen or twenty inches the water will boil up like a spring and keep the tile washed out. If you have a good fall, say twelve inches to the hundred feet, a five-inch tile will carry off as much water as a six-inch will if the fall is but four inches to the hundred feet; the greater the fall the more rapidly

the water will flow, and a smaller-sized tile will answer. One great consideration in draining land is to get the greatest amount of water off in the shortest time possible, with the least expense; but a great many persons that I have noticed draining do the opposite of this.

I had an open ditch on my farm which drained a stream which flowed naturally in the shape of an S; the ditch was cut six feet wide and three feet deep. In putting tile in this ditch I commenced at the lower end as deep as the outlet would allow, which was nearly four feet. I graded this ditch nearly on a level, giving it just enough fall so the water would run, and continued to give it more fall as I advanced up stream, but instead of following the open ditch in the shape of an S, I cut the S across, shortening the distance nearly one-half, by which means I gave the ditch nearly twice the fall it had in following the S-shape, although I had to cut through two ridges, one six and the other ten feet deep, but the amount that was saved in tile by this cut-off more than twice paid for digging this deep ditch. By the time I had dug this ditch three-quarters of a mile it had plenty of fall, and then had a depth, at the lowest place, of over four feet; a quarter of a mile further (being my upper line), I gave it a good fall, making it at the upper end two and a half feet deep; I gave it this fall so that the pressure of the water above would force it rapidly out below, where the fall was less. I continued three six-inch tile in this ditch all the way, branching the other four off as they were needed.

Another big open ditch, that I converted into a tile drain, which carried nearly as much water as the first, I

DRAINED IN A DIFFERENT MANNER,

which I like much better than the first. I commenced at the lower end, at a depth of four and a half feet. This ditch was so meandering that a straight line would save half the distance. Commencing with four eight-inch tile, which I laid side by side for a few rods, I then branched them off at a distance of about four rods apart, continuing them about this distance until near the upper end, when I brought them nearer together to take

all the water of the swale. As I advanced up stream I used smaller tile.

All four of these drains cut across the old open ditch and its tributaries several times. My object in making this drain in this way was to drain a large amount of land with a few tile and get the water off as quickly as possible. If I had put all these tile in one drain they would have carried only the same amount of water, and would have drained only one-fourth as much land as they do now. In digging the drains I had to cut through a few ridges six to eight feet deep, but for all it is the cheapest and best-drained land I have. By tiling the open ditches I not only save thirty feet of the best land on the farm, but save the cleaning of the ditch out every year, which, if tramped with cattle, would cost nearly as much as a new ditch; besides, I get the fields in good shape, and save the lives of a great many sheep, which are lost every year by the open ditches, also the young of other animals.

In draining, always remember that whenever you make a cut-off, although it may cost a little more to dig the drain, you not only save the tile but you get more fall, the water off quicker, and the land better drained; however, in some cases the ridges are too high to dig through, and laterals must be used.

THE LATERALS OR SIDE DRAINS,

as they enter the main drain, should be made to enter at an acute angle, pointing down-stream. Experience shows that if their current enters square across that of the main drain, one or the other stream is liable to be arrested, and sand or gravel deposited, injuring the water-course. The tile drain emptying into the main should have a fall of at least six inches, and the more the better, although, I do not believe in having many laterals, but the smaller the number of outlets the better. In draining six hundred acres of land I have but twelve outlets.

HOW TO LAY THE DRAIN.

Before I had much experience in draining, I would dig my drain the whole length and commence at the upper end and

lay the tile down stream, but I have learned from experience that the opposite of this is best. Always begin at the lower end and lay your tile as the ditch is dug; stand on the tile in laying them, and turn them until the joints fit, hitting them after with your boot-heel so as to keep them close together; lay broken pieces of tile over the joints where they do not fit, and cover the tile as you lay them with a few inches of clay out of the bottom of the ditch, to keep the loose soil from washing in at the joints; after which fill in as much top soil as possible; it will facilitate the descent of the water.

On leaving the drain at any time, put a board or flat stone at the upper end so as to keep rubbish from washing in, and on finishing the drain at the upper end it must be well closed. The last tile at the lower end should be twice as long as the others, having holes through the end, not over an inch apart, with wires so as to keep all animals out of the drain; and there should be a stone wall built across over the mouth of the drain, laid up with lime and sand, or cement, so as to keep the muskrats from digging holes up along the tile. I have known them to dig holes on top of the tile to a distance of thirty feet, which would form a water-course in time of a freshet, and wash the dirt from off the tile.

To know the size of the tile needed, learn all you can about drainage, and use your own judgment. One eight-inch tile will carry off as much water as an open ditch four feet wide and two feet deep, and is sufficient for an outlet for fifty acres. Never continue tile of the same size all the way. Whenever a lateral comes in, a smaller tile will do from that point on, and so on. It must be borne in mind that the tile is taking water all the time, at every joint. The tile at the end that has holes in it should be a size larger than the others, as the wires will impede the flow of the water to some extent.

HOW TO GRADE THE DRAIN.

This is the most important feature of drainage, and should always be done with water, as there is no level for this purpose equal to water. I have learned from experience that it is

almost a useless expense to get an engineer; he can tell you how deep to cut through the ridge to give the water an outlet for a certain depth above, but this will not help any about grading the bottom of the ditch, and if you get the drain deeper above than it is below, just that much it will fill up. You must know that a drain can be very easily ruined by not being graded correctly.

There can be no question in regard to the best form of tile. At first, the horseshoe tile was made semi-circular in shape, and without a bottom. Next, the sole tile, of the same shape as the horseshoe, but having a flat bottom. Then the pipe tile, which is circular, and has many advantages, among them the possibility of being laid true on the bottom, however it may be warped or crooked in burning. Horseshoe tile should never be used, as they will be filled with crawfish and become useless. Tile are usually made twelve and a half inches long, or intended to be, but they are seldom over twelve inches. I have used a great many of this length, and found, on taking them up, that in several places where a stone was removed in the bottom of the drain, that one end of the tile had sunken and the other end raised up, which would leave quite an aperture for dirt to wash in. I found a remedy for this by getting a longer cut-off, and making my tile fifteen inches long, which I find are superior to the short ones in several respects.

DEPTH OF DRAINS.

I have often been asked why I drain so deep. I do so to get the full benefit of my land. After cultivating wheat I dug down to the tile drain six feet deep and found plenty of wheat roots at that depth. Beach land, which is a hard pan that the roots of none of our crops can enter, after being drained and frozen, becomes loose and mellow to nearly the depth of the drain, and twice the amount of grain can be raised on the same land. I found a few swamps composed of vegetable mold that became so light, loose, and chaffy after draining that it would not produce, but after plowing these swamps twenty

inches deep, throwing the subsoil to the top, it became the most productive land that I had.

WHAT KIND OF LAND NEEDS DRAINING.

I doubt if a piece of land could be found which would not be benefited by draining, so that we might truthfully say that all lands need it, the only possible exception being those that have a gravelly or sandy subsoil.

On visiting a friend some years since, I found him draining a wet, springy piece of land at the foot of a hill. He was digging his drain about eighteen inches deep; he said that he had read that it was no use to make the drain deeper than the veins. I tried to get him to make his drain four feet, as he had a good outlet, and finally he put them in three feet; and on examining them several years after, I found that the water veins had sunk to the bottom of the drain, and this piece of wet and useless land had become the most valuable on his farm, and at the end of his tile drain was a living spring of pure water that never froze over, which was valuable for his stock.

The water from tile drains is the purest that we have, and is the best for culinary purposes, and where the land lies in such a shape that it can be used for stock, it is the best water that we have for that purpose.

DRAINAGE FOR HEALTH ABOUT A HOME.

It should be remembered that the well is the outlet for at least ten rods in all directions. I have known whole families to die, and it was said to be the mysterious providence of God, when it was nothing but the cesspools, barn-yards, cow-stables, pig-pens, and slops of the house, all emptying their foulness into the well.

The soil lying between the source of impurity and the well has a certain amount of cleansing power, and while effective withhold the impurity, but by degrees it becomes foul further and further on; and this insidious process of fouling the semi-porous earth with impurity inch by inch continues until, in time, it reaches the well, and then every drop that

flows through this soil carries with it its atom of filth, causing fevers and death. Therefore, deep drains should be made between the well and all places of filth. As the matter is one of great importance, involving doctors' bills, sickness, and death, it should have careful attention.

ITS SINGLE DISADVANTAGE.

Perhaps it is only fair to mention one disadvantage that comes from drainage. If a swampy piece of woodland is suddenly drained, most of the old timber will die; the oaks and hickorys will go first. The change is first noticed in the tops of the trees. However, the young timber soon accommodates itself to the change, and after a time grows more thriftily than ever.

VELOCITY OF WATER IN TILE DRAINS.

From the many experiments that I have made to ascertain as nearly as possible the velocity of water in tile drains, I find that in a six-inch tile, with a fall of four inches to the hundred feet, when the tile was running full of water, it was eight rods per minute, when running half-full, six rods per minute, and the less water there was in the tile the slower it would run. The velocity of a twelve-inch tile when running full would be swifter than this, while in the smaller sizes it would not be so swift, and in an open ditch of the same fall the velocity is four times less than that of a tile drain.

SOLID AND POROUS TILE.

I do not see any advantage in using porous tile. Solid tile is stronger in all respects, and will not burst and crumble like porous tile from wet and freezing. If porous tile is full of water and freezes, it is sure to expand and break and crumble. Some say that tile should be porous so as to let the water into the drain. If there were no other places for the water to enter the drain except by the pores, the land would be poorly drained. Now, for example, take any sized tile you please, having the sixteenth of an inch at every joint (the space at the joints is really greater than this), and, count it up for thirty rods, you find that the water can get in at the joints many times

faster than it can get out at the outlet; and if your drain is a few hundred rods long, the capacity for getting in, is over a hundred times greater than that for getting out.

THE STOPPAGE OF TILE DRAINS.

I know of a three-inch tile drain that stopped running, and on taking it up there were found over twenty muskrats in the drain; they were so swelled that no water could pass them. But roots are the most troublesome, sycamore and willow being the most dangerous, though elm, ash, alder, and some others are attracted by water. Old trees are not so apt to injure drains as young and free-growing trees. Deep drains are not only the best, but are nothing like so apt to be closed by animals and roots. Shallow drains are very often closed by the roots of grass and other growing crops. I have never known a drain so deep that the roots of growing crops could not reach it.

WHAT IT COSTS PER ACRE TO DRAIN.

A field of forty rods square, or ten acres, had four drains put across it from side to side. In these drains were laid four-inch tile for the first twenty rods, costing thirty-five cents per rod; three-inch for the next fifteen rods, costing twenty-five cents per rod; and the last five rods were two-inch, costing fifteen cents per rod, aggregating a cost of tile for one drain of eleven dollars and fifty cents; digging the drain at twenty cents per rod, eight dollars; laying the tile and filling the ditch, four cents per rod, one dollar and sixty cents; making the total cost for draining the ten acres, eighty-four dollars and forty cents.

I have never known a man to lose his farm by borrowing money at ten per cent. to drain it, but I know of several farmers who have lost their farms by paying ten per cent. for money to build with. However, I would not advise any one to pay ten per cent. for money to improve a farm with.

WATER.

The first thing to be looked after is the convenience and supply of good water. I have never seen a better arrangement

for a water supply than my own, on Appledale farm. The house stands on an elevation, and the house well supplies the farm. The water is impregnated with black sulphur and iron, and is very healthy for stock. I have never had a sick animal or called a doctor.

The water is raised by a windmill, which saves a hand and nearly pays for itself every year. The water is carried in iron pipes, three hundred feet, to the west, and same to the east barn yard, also carried through the milk house to the hog lot.

There are no slops thrown out from the kitchen to ferment in the soil and create sickness. There are deep drains about the well, and the well is cemented from the hard boulder clay to the surface, so there is no possibility of any filth which would breed disease getting into it.

PASTURES.

The best pastures are those that have never been plowed, and blue grass, which is a natural growth here, is the best and richest pasture that we have, and the older the sod is, the more feed it seems to yield. I use clover for hog pasture.

A timothy meadow, which I raise only for hay, will last from eight to twelve years, at which time the blue grass will have possession. This is but little use for hay. In the Fall of 1879, my blue grass pasture was well grown, so that I let my milk cows run on it all Winter, and they have done well with but little feed. Cattle that are kept up all Winter should not have their feed cut off at once and turned to grass. I know some farmers that do this always, which produces scours in their cattle, and results invariably in a loss. I commence to feed my cattle and sheep grain a few weeks before they are turned on grass, and continue the grain several weeks afterwards.

It is well for farmers to be posted on the different breeds of cattle. The Short-Horns of recent origin hold a high place in the esteem of many breeders, having been produced by careful selection and high feeding and care. I have allowed these fine large breeds to run for several years with the common natives, receiving no more care, feed, or shelter, and in several

years no one could tell the difference between them and the best of the natives.

DEVONS.

But not so with the Devons, which are the oldest distinct breed of cattle known. The Devons will not run out by neglect or exposure, but under all circumstances and in all climates, maintain their beautiful form and red color, and uniformity of appearance in every feature, shape of horns, tail, etc. Their flesh is finely interspersed with alternate fat and lean, and of superior flavor. The cows yield richer milk, and if properly fed will produce more butter and cheese for the feed consumed. Although they are not a large breed, they will produce more pounds of beef for the feed consumed than other animals. Steers, when properly cared for, will weigh from two to three thousand pounds. They make the best work oxen we have, being fast walkers, docile, and inoffensive, and not inclined to be breechy.

SHEEP.

The most profitable breed of sheep depends on the location. If near a large city, the South-Downs are decidedly the best. They hold the same relation to the sheep family that the Devons do to cattle. They will do well on short pasture, attain early maturity, and are hardy and prolific; they are not long-lived sheep, like the Merinos, but are in their prime at three; for mutton they are superior to all other sheep. I sold my lambs last July and August, weighing from forty to seventy-five pounds, at two dollars and a half per head. When well kept and cared for, they will average five pounds of combing wool, bringing the highest price. They, like the Devon cattle, transmit their blood in the strongest degree. Wethers, at three years, will weigh two hundred to three hundred and fifty pounds, and are more easily fattened than Merinos. But for wool, the Merinos are the most profitable, as they will herd better than any other sheep.

If I raised but one kind of stock, it would be sheep; they

enrich the farm faster than other stock, dropping the manure mostly on the highest places, where it is needed, and return the most money for labor expended. Every farmer should keep a few sheep anyway, as they are good to kill weeds and briars.

HOGS.

Although hogs are the most prominent in all the rich corn growing regions of the West, and will return more money, they require much more labor. It is hard work from beginning to end, and is very exhaustive to the land. A man that has but a small farm will do better to produce hogs only. The Poland China and Berkshire are the leading breeds.

HORSES.

A bank or basement stable is not a healthy or fit place to keep horses. My stable is at the south end of the barn, with half doors in the south to let the rays of the sun in and for ventilation, and to throw manure out. The floor is two feet above ground, and is kept clean, with plenty of straw for bedding,—the manure pile being hauled away as fast as made. I never tie my horses up, or imprison them in any way, but turn them all together, with the stable door left open, and give them all the liberty of the barn-yard, straw-stack, and water trough, and they are always peaceable and happy, and ready for their feed. I feed my horses what fodder or hay they will eat, twice a day, with two ears of corn twice a day, increasing the feed as the working season of Spring approaches, but never feeding over nine ears. Change their feed often in hot weather, and give them a tablespoonful of salt, with hickory wood ashes every other day in the corner of their trough, but never on their feed. Never keep more horses than you need. I keep from ten to fifteen head, and give them no condition powders, or other poisonous drugs, and have never had one of them sick. A barn-yard well, that takes in all the filth of the barn-yard, is a source of disease among stock. I always warm the bridle-bits before putting them in the horses' mouths. If you

think the bits are not cold enough to hurt their mouths, touch them to your tongue and see.

ROTATION OF CROPS

is necessary on all kinds of land, although I have known thirty crops of corn to be raised on our rich lands in succession, the last crop being forty bushels to the acre. I never raise more than six crops of corn on new land, however, and then sow to wheat and grass. I always sow a wheat crop after Hungarian grass or oats, but never like to sow wheat on a wheat stubble. On clay land sown to wheat, I seed clover and let it remain two years, then plow under when in bloom, planting to corn the next Spring, so that the field will do to seed to wheat in the Fall.

PLOWING.

A man should not plow simply to get the best results for the present crop, but should plow to have the best crops in all the coming years; and the only way to do this is to plow deep, though not all at one time, but keep getting deeper every year. The best results are obtained in our rich clay lime soils, by subsoiling with a regular subsoil plow, except put a narrow moldboard on that will throw a part of the subsoil to the surface. It is best to do this in the Fall. You can not, however, plow to much advantage unless the land is underdrained; but if well underdrained, subsoiling is a great success.

PLANTING AN ORCHARD.

Plant but few varieties of the best apples suited to your climate, and most of them late keeping, firm, hard, Winter varieties, such as bear well. Buy the trees of the nearest nursery. Rome Beauty, Broadwell, Tallawater, Liberty, Seek-no-further, are good Winter apples; Bethlehemite is the best Fall apple, and Danvers Winter Sweet is the best Fall sweet apple the former being the best keepers, but small or medium.

Prepare the land for planting by subsoiling, throwing the furrows out at thirty feet apart, and put plenty of the top soil for the roots to feed on; raise a cultivated crop, potatoes the best, until the trees are grown, but always keep the land level;

plow first one way and then the other. When your trees are large enough, sow to grass. Shape the top of your trees while young, and then trim no more.

MANURES.

It has been said by many farmers that manure was the farmer's capital; but such is not the case, at least in the great West. DRAIN TILE is the farmer's capital, and as I have very fully given my views and ideas upon the subject, I will now say a few words upon manures. When I travel over the fair and beautiful land of Ohio, and behold its fine mansions and well arranged farms, I suppose that the farmers possess a vast amount of agricultural knowledge; but on making a close observation of their farms, and asking a thousand questions about the high and noble calling that they are engaged in, and how they manage things generally, I am often surprised to find that they do not understand the first principle of agriculture, which is to keep the land up to a high state of fertility. I have often seen farmers committing the suicidal act of burning their straw and raking up their corn-stalks and burning them. A man who does this is a robber and a thief, who takes from the land its fertility without returning it. To keep up such a system of farming as this would certainly impoverish the coming generations, and destroy any country or any nation.

HOW TO SAVE AND MAKE MANURE.

The urine of animals contains a very large amount of nitrogen, the thing most needed for plant food, and though the richest and best part of the manure it goes to waste on most farms. To save this valuable manure, I have the floor of my cow-stable tight, with a close drain at the back part of it, and have my straw-stack near to give the cattle plenty of bedding, which will absorb all the urine; then as fast as the manure accumulates, both at the cow and horse stable, I haul it to the fields, and lay it in piles until wanted. But the most practical way for the mass of farmers to save the greater part of the urine, is to let the stock run to the straw-stack,

with plenty of straw for them to stand on while eating, and lie on. In this way a great part of the urine will be absorbed and retained by the straw.

If the straw-stack is not all used up by Spring, tear it down and let your cattle lie upon it at night during the Summer if possible. Every thing on the farm that will make manure should be looked after for that purpose. Corn fodder should be fed out in racks in the barn-yard. By this means a large amount of valuable manure is made, with most of the urine retained in it, as the cattle will keep on the stalks in preference to going in the mud. I gather all the bones and put them in the bottom of the ash leachery; they do not injure the lye for soap, but are dissolve, making rich fertilizers. All the wood ashes should be saved and spread about the fruit trees, especially the peach. Unleached ashes are rich in potash, and valuable for fruit or potatoes. Leached ashes contain a large amount of calcium, and are valuable food for crops of all kinds.

W. C. HAMPTON,

MOUNT VICTORY, HARDIN COUNTY.

THE FARMERS' WOOD LOT.

One of the most valuable adjuncts to the farm is the farmers' wood lot, from which indispensable supplies can be drawn for buildings, fences, and the wood-pile. In addition to these important uses, it makes a good pasture and range for the stock of the farm, and becomes an ornament to the latter, especially when groups of well-bred cattle and other stock are reposing beneath its grateful shade, protected from the Summer's midday sun, or the chilling blasts of Winter.

Some persons say that the labor is too great to grow one, but my experience has satisfied me that it is no more trouble to raise a crop of trees than any other crop; it is only a question of time, and it will not be long before it will be con-

sidered a paying investment. The failures in this direction have usually been caused by neglect after planting. If young trees from the forests or seed beds are used, they should be headed down to within four inches of the roots; this will cause a healthy and vigorous growth, and if not done, the check they will receive in transplanting will retard their growth for several years.

HOW TO PLANT.

The best way is to plant the seeds in rows, which should run north and south, if practicable; and some hoed crop should be cultivated between the rows to prevent them from being choked out with weeds in their early growth. If no other crop is between them, they are liable to be neglected. But when every other row is planted with corn, potatoes, or beans, the produce will more than pay for the entire cultivation, and the young trees will be greatly benefited.

I would recommend planting the first row with large growing and valuable timber trees, leaving the second row for some such crop as corn, potatoes or beans. The third row plant with seeds of smaller growing or less valuable timber trees, to be removed before the others, and leave the fourth for a crop row. The fifth row plant as the first. If the rows are three feet apart, this will place the most valuable trees in rows fifteen feet from each other, which, after the middle one has been removed and the thinning out has been completed, will be wide enough apart for a good growth to the most valuable timber. For many years the third row and the thinnings from the others will furnish a supply of firewood, hoop-poles, fence rails, stakes, etc.

After thirty years' experience in collecting and growing tree seeds, I have adopted the following method, viz.: Procure boxes six inches deep, and put in four inches of sand or light mold; on this sow your seed, not too thick, and cover with leaves or some other light substance. To prevent the mice from destroying the seeds, nail on lath close enough to keep them out, leaving space enough to admit moisture and air. Place these boxes in some spot where the seeds will freeze in Win-

ter, and as soon as the ground can be worked in the Spring, plant them out in rows as above directed. They should be covered with light soil, not deeply, from one-eighth of an inch to one inch. If the seeds are sprouted, they will make an early and strong growth.

The following list of trees contains all of the most valuable trees for Ohio, Indiana, Illinois, Iowa, etc.:

Sugar maple, black sugar maple, silver maple, red maple, mountain maple, rough buckeye, smooth buckeye, pawpaw, berberry, white birch, poplar birch, weeping birch, canoe birch, sweet birch, water beech, black hickory, shell-bark hickory, large-bark hickory, small-fruited hickory, thick shell-bark hickory, bitternut hickory, choke cherry, wild black cherry, green dogwood, large white dogwood, white-berried dogwood, red-twigged dogwood, leather wood, trailing wahoo, American beech, white ash, blue ash, black ash, red ash, honey locust, thornless honey locust, small-pod honey locust, coffee tree, black walnut, cucumber tree, butternut, red mulberry, box elder, iron wood, buttonwood, Winterberry, wild plum, bird cherry, mountain ash, Western crab-apple, American aspen, cottonwood, angled cottonwood, white oak, chestnut oak, swamp oak, Spanish pin oak, red oak, hybrid oak, burr-oak, mossy burr-oak, olive burr-oak, bush willow, black willow, brittle willow, common and red elder, meadow-sweet bladder-nut, American basswood, white elm, slippery elm, rock elm, prickly ash.

INDIANA.

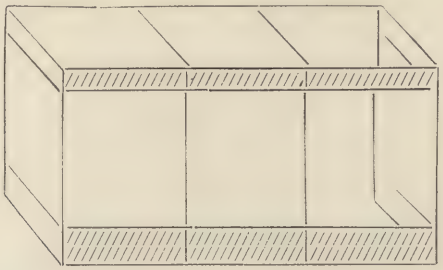
HENRY C. MEREDITH,

CAMBRIDGE CITY, WAYNE COUNTY.

Sheep Racks and Troughs.

Experience has taught me that there are several better plans for sheep racks than the old style with slats nailed to stringers, which have an open front for hay seed and other litter to get into the wool. I have several different kinds, the two best of which I will describe.

The first I made in a very simple way, and it can be put up by any one. I take two by four scantling, and cut into pieces two and a half feet long, which are placed upright eighteen inches from the wall on the floor of the sheep pen. A board twelve inches wide is used for a base board, and a five inch board for top; at each post a brace is nailed, connecting with the wall. This makes a rack like the following:



This same rack can be made double, so that sheep can feed on both sides at the same time. In case it is made double it would have to be made down the middle of the sheep house,

and should be thirty inches wide, with the same dimensions otherwise. I have several built on this principle, but with different dimensions, and find that the most economical ones are made as here suggested. If these directions are closely followed, it will be found that there is ample room for holding all the hay that sheep standing to it can eat in twenty-four hours, and by using care in putting the hay well down in the rack, there is no danger that sheep will eat from the top and draw the hay on the backs of the others, getting seed and litter in their wool.

I also find a rack of this size economical, as the sheep can readily get at the feed, and the hight of the base-board being twelve inches, obviates the danger of dragging out the hay under their feet.

TROUGHS.

When grain is fed and this rack is in use, I have troughs with flat bottoms, ten inches wide, along one side of the building. A railing is placed over it by nailing five-inch boards to two by four uprights, two and a half feet high, as I do for hay racks. This keeps the sheep and lambs from getting into the the trough with their feet, which is a great detriment to their feeding well. A trough of this size is not liable to have any wasted grain, as is the case with those of V shape, when one board is simply nailed to another. If you make those V shaped troughs of wide lumber, the sheep will wear their wool under the neck, which makes them look ragged. The flat bottomed troughs are the best, and most economical.

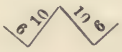
ANOTHER RACK.

The other style of rack and trough combined I have not used as long as the first mentioned, but I like it equally as well. It is simple of construction, takes up little room, is economical with feed, and is certainly worthy of recommendation. It can be built in sections of any desired length, and if necessary, can be made portable.

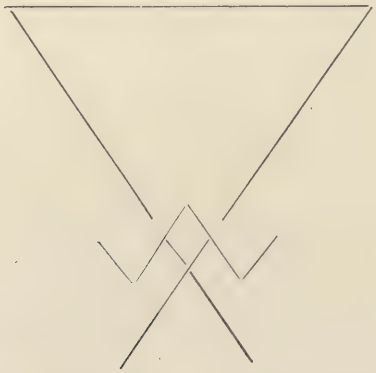
Take two by four scantling, cut four feet long; eighteen inches from one end saw a notch two inches wide diagonally

across, so as to allow two of the pieces to fit together like a saw-buck, thus:

Boards ten inches wide are then nailed on each side below the crotch, allowing the edges to meet at the top, thus, ∧. Notches are sawed at intervals to allow the boards to fit well around the cross pieces. This board is made the back side of a trough by nailing a six-inch board to the lower edge in this manner:



The next step is to take wide boards, the wider the better, and nail to the outside of the cross pieces, beginning at the bottom and boarding up tight, leaving a space between the lower edge of the side board and the back part of the trough of three inches. The end view of the rack would be like this:



When it is designed to make long racks and troughs, they need not be made so strong nor so well braced as when made shorter, and to be moved from one place to another.

Among the many advantages this rack has, are, first, the small space it occupies for the feeding room it gives, accommodating sheep on both sides for grain and hay; and, second, the impossibility of hay seed and litter getting into their wool, and the fact that all seeds and small grains fall into the trough where the sheep gladly eat them. The hay being placed above, falls below as it is eaten from, and the small space from which it is taken prevents any undue waste. The top of the rack is so high that sheep can not eat from over the top, and draw the hay on to the backs of the other sheep, and the troughs and racks are so connected that there is no temptation or possibility for them to get into the troughs with their feet. I find that open sheds, with good, tight roofs, are the best and healthiest places for sheep. If the sheds can be adjacent to the pasture, so that the sheep may go in or out at pleasure, it is better than to be compelled to house them during storms or at night. A flock will soon seek a shelter if fed well there for a time. During the Winter, hay or some coarse food should be in the rack at all times for them to pick at.

I aim to allow two feet trough or rack room for each sheep, though for smaller breed than South-Downs or Cotswolds, less would answer the purpose equally as well.

HOUSING SHEEP AT NIGHT.

It is very little trouble, however, to put the sheep in the house every night, and turn them to pasture in the morning, as they soon learn to come to the gate as the cows do.

CLEANLINESS.

Care should be used at all times to keep the house from becoming filthy, as sheep are cleanly and will not abide in a foul house if they can help it. Neither is it healthy for them to do so. The foot rot and other diseases soon attack them if not kept perfectly dry and clean. This is especially necessary where sheep are kept in large numbers. The stables or sheds can be kept dry by scattering litter over the floor from time to time as needed, until the manure is nearly a foot deep, when it should be cleaned out. The troughs and racks I have described,

provide for allowing the manure to accumulate in the stable, as that place is preferable to any other. When lambs are to be fed extra and separate from the ewes, I have an adjacent shed, with small troughs to suit arranged in it, and an opening from the other shed just large enough to allow the lambs to pass in. The lambs soon learn that they have better rations in the other place, and are very quick to get to it when turned into the shed, or opportunity offers.

EDWARD P. WEYER,

MADISON, JEFFERSON COUNTY.

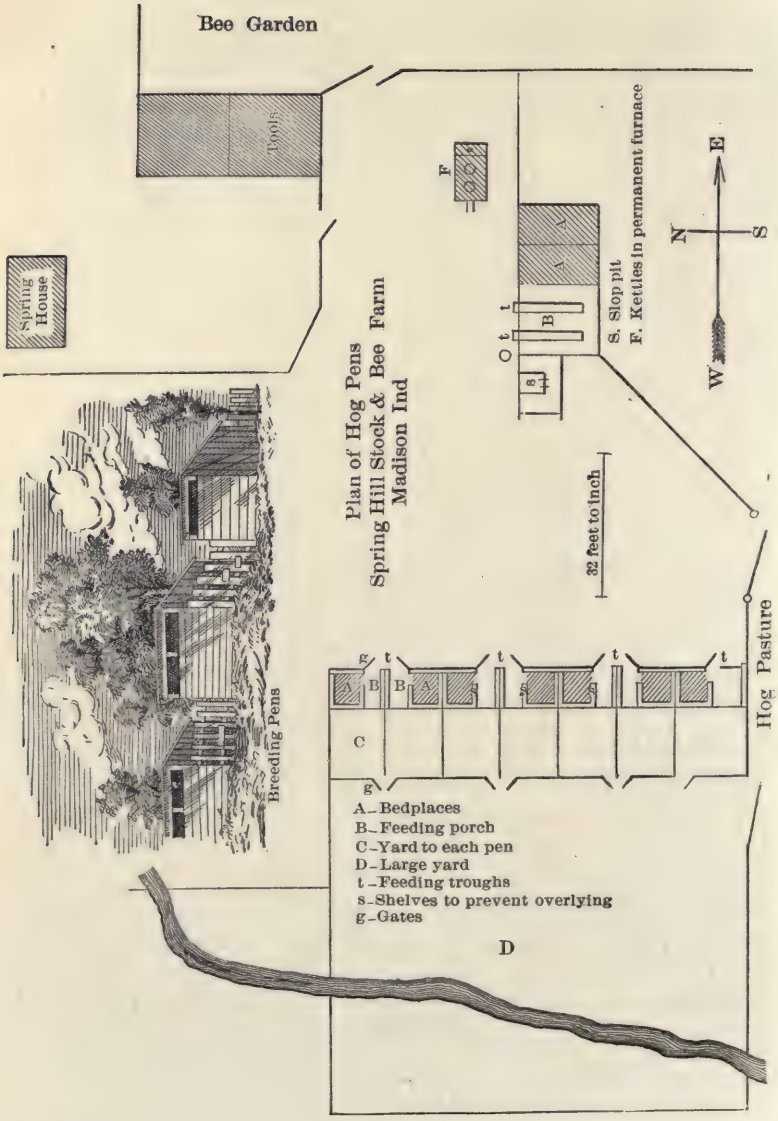
Stock and Bee Farm — Short-Horns — Sheep and Hogs.

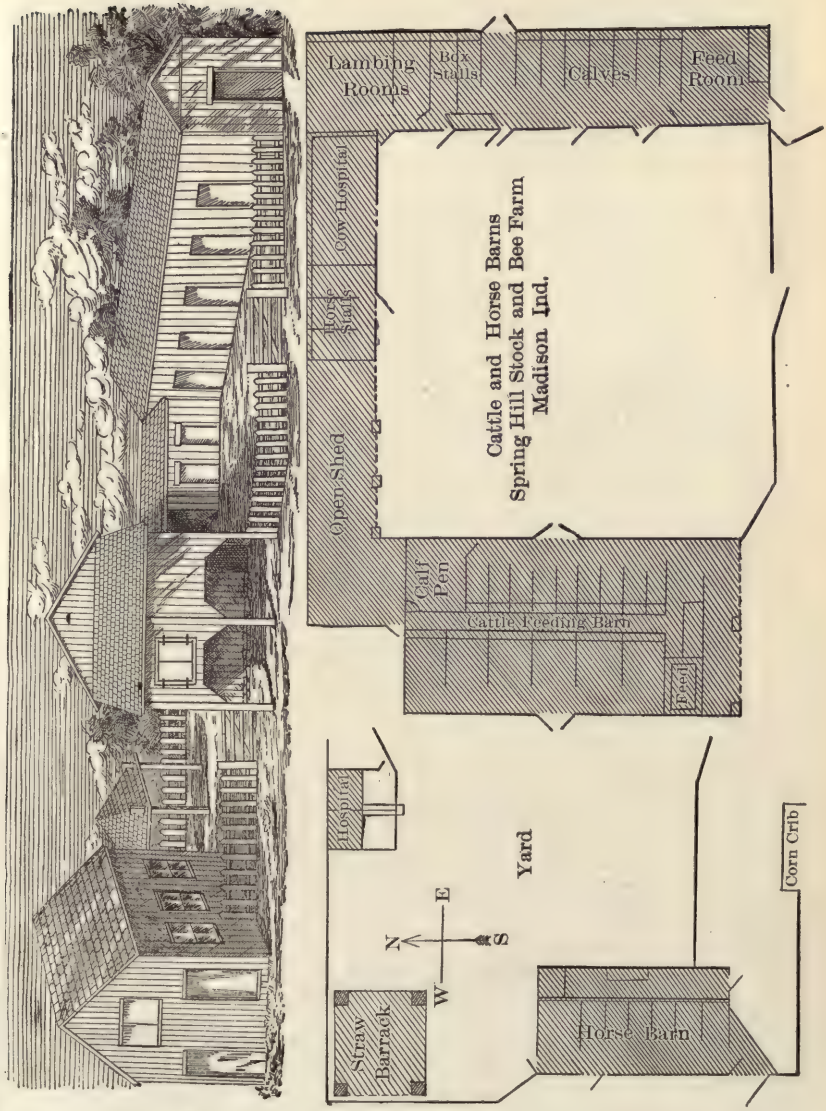
SPRING HILL STOCK AND BEE FARM.

My farm is located within one-half mile of the corporate limits of the city of Madison, Indiana, and contains two hundred and seventy-five acres of fine land on the highlands extending back from the Ohio river, the surface rolling sufficiently to afford good natural drainage. The soil is a deep fertile loam overlying a subsoil of red clay, and is well supplied with abundance of soft limestone water from conveniently situated living springs. My usual practice has been a course of mixed husbandry, with the raising of cattle, sheep, and hogs, though the farm is well adapted to branches of nearly every kind. I have now under cultivation about one hundred and fifty acres, the remainder being occupied by the buildings, orchards, open and woods pasture, timber, etc.

GRAIN.

Wheat is the only grain product usually sold from my farm, though I have grown barley successfully. All corn, oats, and hay, I consume on the place. I have never ascertained the cost of each particular crop, but my accounts have always


Bee Garden
Pools
Spring House
F
S. Slop pit
F. Kettles in permanent furnace
N
S
E
W
Plan of Hog Pens
Spring Hill Stock & Bee Farm
Madison Ind
32 feet to inch
Breeding Pens
Hog Pasture
A
B
C
D
t
g
s
A-Bedplaces
B-Feeding porch
C-Yard to each pen
D-Large yard
t-Feeding troughs
s-Shelves to prevent overlying
g-Gates


Lambing Rooms
Box Stalls
Calves
Feed Room
Cow Hospital
Horse Stalls
Open Shed
Cattle and Horse Barns
Spring Hill Stock and Bee Farm
Madison Ind.
Calf Pen
Cattle Feeding Barn
Feed
Hospital
Yard
N
E
S
W
Straw Barrack
Horse Barn
Corn Crib

been made up in the aggregate, approximating only the cost of each item; therefore I can give no details.

HORSES.

Jefferson county for years has had an excellent reputation for the quality and character of its horses for speed, several stallions of fine breeding being owned in this and adjoining counties. On my farm, "Arab Star" is making a season. He is a chestnut horse, foaled 1875, by Heinzel's American Star, dam Zelica, an Arabian mare; was bred and is owned by John P. Newell, of Florida, N. Y., and is registered in the stud book.

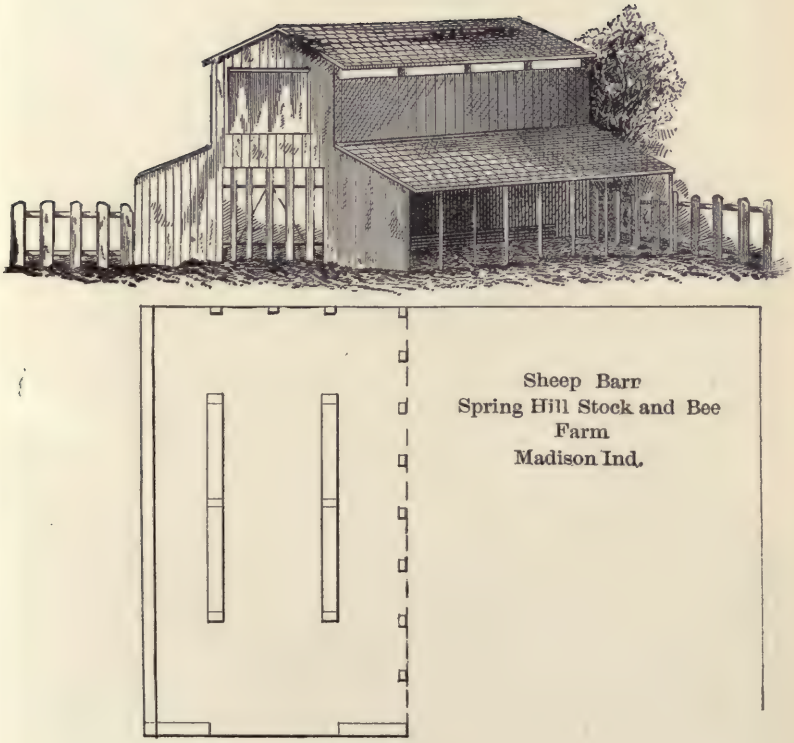
NEAT STOCK.

I have raised high grade Short-Horns, using a thoroughbred bull, not of fashionable pedigree, regard being had more to his form and constitutional vigor for producing early maturing animals. I use Jersey grade cows for this cross, but they do not answer so well as grade Short-Horns, because my object is to obtain the greatest amount of flesh in the shortest time, without much regard to the milking qualities, though this is not entirely lost sight of.

My cattle are housed in clean, well ventilated stables. The feed is made up with starch feed meal base, with bran, etc., changing the mixture occasionally, and feeding regularly only just so much as will be eaten up clean at one time. I supply with an abundance of pure water; not the drainage of the barn-yard, or from stagnant ponds. The success of my method is indicated by the weights of two calves sold a short time since, one fifteen months' old heifer weighing nine hundred and forty-five pounds, and one five months' old bull weighing five hundred and eighty-five pounds.

COTSWOLDS.

My sheep are high grade Cotswold, shearing six to eight pounds of wool each. My custom has been to sell the buck lambs in early Summer and the cullings of the flock in the Winter. Their feed is the same as I give to the cattle, and I provide them with roomy, open sheds, enclosed by a high paling



Sheep Barn
Spring Hill Stock and Bee
Farm
Madison Ind.

fence, to protect them from prowling, murderous dogs. The splendid natural drainage of my land fits it especially for a choice sheep farm.

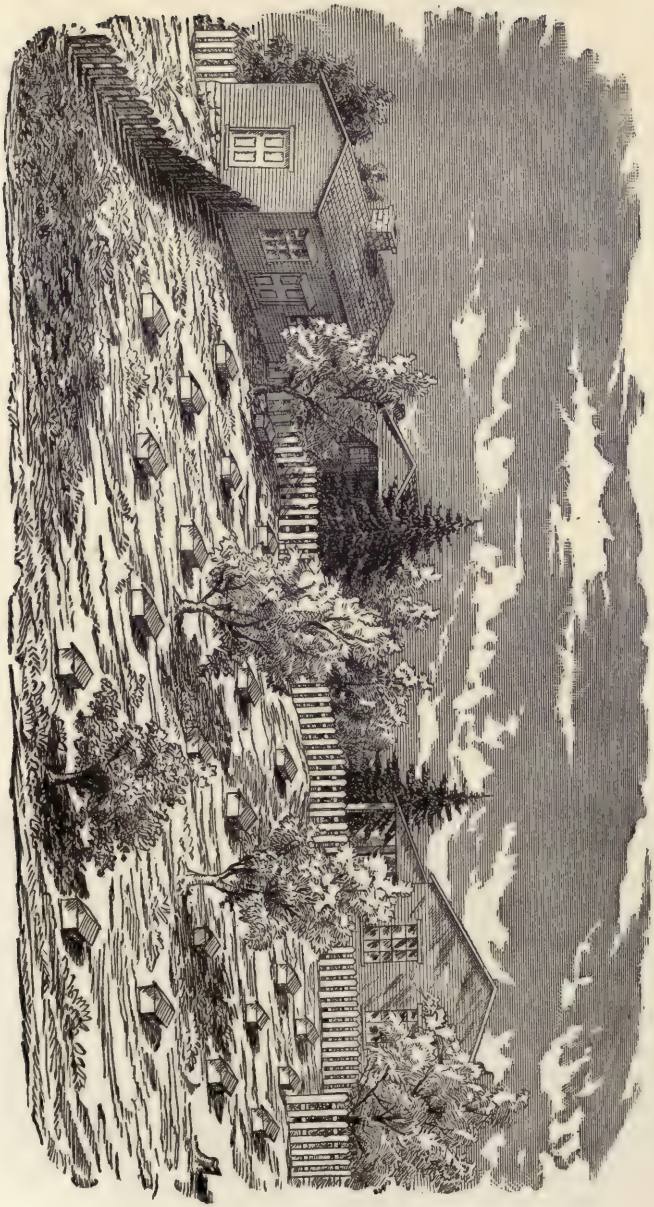
HOGS.

My swine are thorough-bred Poland Chinas, and are in demand in this market. This breed assimilates food readily, matures early, and usually brings from fifteen to twenty-five cents per 100 pounds above the ruling prices. I arrange it so that my sows farrow early in February, and again in late Summer, and I push the young pigs from the start, to have them ready to sell at from ten months to one year old. My pigs have been unusually healthy, which I attribute to my care to avoid inbreeding, and by the judicious use of antiseptics. At least once a week, and often a second time, I give in their feed a mixture of equal parts of powdered charcoal, roll brimstone, sulphate of iron (copperas), salt.

The base of the hog feed consists of the refuse from the starch works, with linseed or decorticated cottonseed oil meal, and sometimes the coarser starch feed meal is added, to obviate the costive tendency of the slop. The importance, also, of clean bed places and pure water, is thus shown to be as a factor in swine raising.

BEES.

The culture of bees is the only specialty I have made on the farm, the hive, and other implements used, being of local invention. This hive is the result of many years' practical experience, and is of large size and well ventilated, as I see the necessity of supplying abundant room for the bees and surplus honey, if I would obtain any profit. Artificial swarming I almost exclusively practise, for the purpose of retaining the greatest number of working bees together in the hive, to gather the flush flow of honey when it comes. In the Winter my bees are left on their Summer stands, and the extra space around the brood chamber is packed with chaff, cut straw, or dry leaves, to protect them from sudden changes of weather and excessive cold. At the same time it enables me to give



them at any time needed food to stimulate or prevent Spring dwindling.

COMB HONEY.

Comb honey I obtain in single comb sections, containing one and one and a half pounds each, respectively. These sections are held in place by holders of improved shape and construction, and are readily removed or placed in the hive. To obtain extracted honey, I use the same hive, making a few simple changes, and having as many as eighteen frames or comb-holders in a row, but not, as in all other hives, placing one tier of frames over another. With this hive the management of the honey bee becomes an easy, pleasant, and profitable employment. This branch of my farm business I find more profitable than any other, in comparison with the capital and labor required. But unless a farmer finds pleasure in the occupation, is willing to devote some time to the study of the nature and habits of his busy little friends, and will give careful, intelligent attention to their wants, by providing suitable implements and hives, any outlay in this direction is sure to meet with failure. Should he, however, engage in it earnestly, at first only in a small way, and increase the business as he gains in knowledge and experience, he will be certain to have handsome returns on his investment.

FRUIT.

I grow the usual varieties of apples, pears, peaches, plums, quinces, and cherries. It may not be out of place to say, that the Rev. Henry Ward Beecher, when a young man, preaching in the then West, selected the varieties of apples for my oldest orchard. A number of farms in this vicinity, averaging from fifty to three hundred acres, are devoted exclusively to fruit raising, principally the peach. Peach trees can be counted by the thousands, and during a fruit year the business in this line is immense.

I. B. SMITH,

QUEENSVILLE, JENNINGS COUNTY.

Corn — Stock — Creameries — Fruit — Buildings.

I commenced farming some forty-three years ago, with no other capital than my hands and brains and a good constitution. I now own thirteen hundred acres, all fenced, and nearly all under a good state of cultivation. This land has cost me from sixteen to forty dollars per acre. These lands are divided into three farms of 400, 425, and 500 acres each, lying near each other. I have from four to five hundred acres in meadow timothy, clover, and red top. I raise from sixty to eighty acres of corn, annually; from thirty to fifty acres of oats, and from forty to one hundred acres of wheat. These are my principal crops. The rest of my farms are in pasturage.

FARM IMPLEMENTS.

I have three mowing machines, and one combined machine, all Champions. I have one of Foust's hay-loaders. I have four harpoon forks, of three different patterns, which I consider of great advantage. I have, in addition, six horse-rakes, also racks and carriers in three of my barns. I have five chilled breaking plows, and three steel plows. The chilled plows are of Oliver's patent, and Wagner's. I also use two double cultivators, and six double shovel-plows. I have, also, four harrows of different patterns, but give the preference to a spring-tooth harrow made at Kalamazoo, Mich. I have, also, the corn and wheat drills, besides the ordinary small wing plows, some four in number, and also one sub-soil plow.

STOCK.

In regard to the stock I keep, I have fifteen horses and mules, seven teams, and one single horse. I have five two-

horse wagons, one carriage, and one buggy. I usually keep from thirty to sixty steers and heifers, besides milch cows.

HOGS.

I always keep from forty to seventy hogs. I do not keep sheep, as dogs are so destructive.

I keep stock principally to use up such food on the farm as I can not sell to advantage. I do not consider stock raising very profitable, unless the very best blooded animals are raised. I aim to feed all of my grain out on the farm, excepting wheat, and make all of the manure I possibly can; and I buy all the manure I can, and put it on top of the ground.

HORSES.

I find that the best horses are our common, largest mares, bred to the best fast-trotting stock. These make the best horses for general farm work, as they will plow all day and kick up their heels at night, and also make splendid roadsters. I have several that can travel from six to ten miles an hour without much fatigue, but I use mules for slow, constant work. I want my horses to weigh from twelve to fourteen hundred pounds each, and mules not less than 1,000 pounds.

CATTLE.

I regard the Short-Horn as being altogether the best for beef, and many of them make splendid milkers.

POLAND CHINA HOGS.

I have raised all of the leading breeds of hogs for many years, but I give the preference to the Poland China, as they make the largest hog with the same amount of food. I sell most of my hogs on foot.

I buy my steers in the Spring, and pasture them till Fall, and then sell them at the Cincinnati market. I keep a sufficient number to eat up the straw, and feed some corn in the Spring, but do not rely on stock or grain raising as my principal source of making money. There is too much cost and risk to pay well.

HAY PAYS BEST.

I have made the most of my money by raising and baling hay. I cut eight hundred acres that will make from one to one and one-half tons per acre. I can cut and put it in the barns, by the aid of machinery, for two dollars per ton. I can press it and deliver it on the cars for two dollars per ton, and send to the markets of Louisville, Cincinnati, Madison and Indianapolis, where I get from eight to twelve dollars per ton, which, after deducting interest on cost of land and the use of buildings and hay press, wear of machinery, and use of teams, leaves a clear profit in a fair season of from four to six dollars per acre.

FERTILITY KEPT UP.

In order to keep up the fertility of the land in raising hay, I recommend the following every fifth year. Turn under in June the entire crop, cross plow in September, sow to wheat, seed down to clover and timothy, three-fourths timothy. That amount of clover will not hurt the sale of the hay, and has a good effect in keeping up the fertility of the soil.

FRUIT RAISING.

I have about two thousand bearing apple trees of the choicest kinds. I took high, rolling clay loam, resting on limestone, subsoiled it eighteen inches deep, laid it off thirty feet apart, and planted the trees carefully, spreading the roots and putting good soil near them. I cut back the tops, cultivated in corn two years, and fed the corn on the ground. I sowed to oats and clover, hogged off the oats, and turned under the clover the second year in June. I have turned under clover for the past six years. The trees are fine and thrifty and bear large, fine fruit in fruit years.

I do not sell apples largely in fruit seasons. The price is very low for Summer and Fall fruit, and our Winter fruit does not keep as well as further north.

BEST APPLES.

I regard the Early Strawberry, Early Margaret, Golden Russet, as the best early apples. The Maiden's Blush, Rambo,

Gravenstein and Fall Pippin, are among the best Fall apples. Rome Beauty, Smith's Cider, Baldwin, Roxbury Russet, Tulpahocken, Rawle's Janet, White Pearmain and Ben Davis, are all good Winter apples.

PEARS.

I have one thousand pear trees just beginning to bear. I planted and cultivated just as I did my apple orchard, excepting that I planted them twenty feet each way. They are nearly all standards and mostly of the following varieties: five hundred Bartlett, about fifty each of Buffum, Flemish Beauty, Rossiter, Duchesse d' Angoulême, Seckel, Hanney and others. They are now nine years old, and beginning to bear. I raise the small fruits and grapes for home consumption.

CREAMERIES.

I have had some experience in furnishing milk and in observing the running of the factory. I am of opinion that making butter and cheese is very good business when well managed, and is profitable to farmers. A home market is made for their produce and it keeps up the soil.

BARNS.

I have six barns. My nearest barn is about twelve rods from my dwelling house, and is forty-seven by one hundred and sixteen feet. My carriage and tool house is sixteen by forty-seven; stable, twelve by forty-seven; feed room, eight by forty-seven. All these are at one end of the barn. At the other end is a stable, twelve by forty-seven feet, a threshing floor, twenty-four by twenty-four, a granary, twelve by fourteen, two more stables, twelve by twelve each. The middle of the barn is one large mow. I have another barn, about fourteen rods from the house, sixty by sixty feet, with hay press in the center. This barn is entirely for hay and holds about one hundred and twenty tons. The third barn is halt a mile from dwelling, and is forty-five by eighty-five; there is a stable across one end, with a cistern; the remainder is entirely for hay, and holds ninety tons. My fourth barn is for dairy cows, and is forty-eight by forty-eight. The stables are

on three sides, with stanchions for twenty cows and four horses. A room for bran is at one end, six by eighteen feet, with loft overhead, and twenty-four square feet in the center of the barn for feed.

Barn number five is twenty-six by sixty-six feet, with a stable twelve feet across one end. The remainder is designed for hay. Barn number six is sixty by sixty feet, with stable on one side and sheds for stock on two sides, with a granary and room for eighty tons of hay. The land here is clay loam, well timbered. It is good pasture land, well watered and tolerably good for wheat and corn.

T. KEENE,

VALPARAISO, PORTER COUNTY.

Sheep — Hogs — Drainage.

My farm lies one and a half miles north of the city of Valparaiso, and is what is called barren land, the timber growing short and scrubby. The soil is clay. My husbandry is mixed, and I raise no more grain than I feed, except wheat. Clover, I think, kills after the second year, if sown clear. Timothy is a sure crop and pays better than grain.

SHEEP.

My soil is well adapted to sheep raising and they are my favorite stock, but we have a serious drawback, one which has discouraged some of my neighbors, and that is, dogs. It is a shame to be obliged to watch your sheep during the day and yard them at night, in order to save them from blood-thirsty curs, but such is the case. Last Summer I left my flock a few nights in my orchard lot, and lost five per cent. of them in one night as the result.

BEGINNING A FLOCK.

I commenced my flock by buying some natives with woolless legs and bellies, shearing less than three pounds to the

head. I first used a Cotswold buck, which gave me large bodies but light fleeces. I do not think he was a number one sheep. I then used a Merino buck which sheared seventeen pounds. This cross gave me good frames and good fleeces, and I am well pleased with the result, but shall use the best Cotswold I can get next year.

NOT MUCH STOCK.

I keep a few cows and some young stock, but pasture is too expensive to make it profitable raising beef for market.

HOGS.

I consider the Berkshire and China hogs the best breeds for our market. The Berkshires are restless, while the Chinas are quiet. Both breeds do well with plenty to eat and good care. I like to see a clean stable, and I dislike to see a filthy hog-pen. I grind some of my corn for fattening hogs, and all my feed for cows and ewes suckling lambs. I use the Challenge feed mill, run by horse power. It takes no longer to grind it myself than it does to carry it to mill and back, and then I save the toll, which is quite an item. Then I use my power for cutting straw, shelling corn, and sawing wood.

FEEDING.

I feed all my straw in racks and mangers, and what is not eaten is thrown into the yards. Sheep and cattle are yarded on it during the Summer. I haul it out in the Fall and spread from the wagon and plow under for a Spring crop, or, if needed, put on Winter wheat at time of sowing. I used to haul and unload in heaps, making four to six of each load, and then spread them at the time of plowing, but have learned a better way.

DRAINING.

I have had some experience in draining, having at least thirty acres of marsh on my farm, which, when I bought it, was considered worthless land. It laid to commons, and was so soft and miry that I was frequently obliged to pull cattle out of the mire and float them out to dry land. I was

inexperienced in draining, but resolved to try my skill in the business. The water would stand from six to eighteen inches deep through the Winter, and some seasons nearly through the Summer. In cutting the outlet I was obliged to dig through stiff clay about fifty rods, thirty rods three feet deep, and twenty rods five feet deep, and six feet wide on the top. This cost me fifty cents per rod, and board. After getting into the mire I did not go so deep, and it cost me about thirty cents per rod. I cut them on three sides, the road being on the fourth. After letting it lie for three years, I plowed it in the Fall and planted to corn the following Spring.

I have raised three crops of good corn in succession. One year I had my land in oats, but just as they came up a heavy rain arose which flooded all low lands, and the ditches at the outlet not being large enough to carry the water off, they were drowned out. Last year I raised a good crop of Winter rye. While I have been cultivating it I have widened the ditches so that I can cross at any place with a loaded wagon or reaper. I advocate tile drains, believing they will pay for themselves in two years at least. I shall commence putting them in this season. I can get the ditches dug and filled for twenty-five to thirty cents per rod.

JOHN WEIR,

TERRE HAUTE, VIGO COUNTY.

Rotation of Crops — Average Yield of Fields.

My farm consists of eighty acres, and is divided into eight ten acre lots. My house, outbuildings, orchard, and blue grass pasture occupy ten acres. The remaining seventy acres I work.

ROTATION OF CROPS.

I practice rotation, planting first potatoes. As soon as they are dug, I sow the same ground to wheat. As soon as the wheat crop is off the ground, I put in wheat a second time.

At some time in February, I sow clover seed on the wheat, letting the clover stand two years. I either pasture or mow it. After the clover, I plant the land with corn two years, and then plant potatoes again. Thus it takes seven years to make a rotation. As I have seven fields, I have one field in potatoes, two in wheat, two in clover, and two in corn each year.

PLAN OF FIELDS.

The plan I submit has the fields numbered 1, 2, 3, 4, 5, 6, 7. The dots along the edge denote soft maples that I have planted inside of the fence along the public road. They stand about two rods apart. The dots in the lawn fronting the house represent timber, such as poplar, elm, dogwood, ash, pine, cherries, black walnut, cedar, and pecan. These trees have been planted over twenty-five years.

Figure 1 represents the location of the house. Figure 2 shows the site of the horse barn, cow stable, and carriage house. I have a lifting apparatus for raising two wagon boxes and two hay racks, with room enough for two wagons and two buggies.

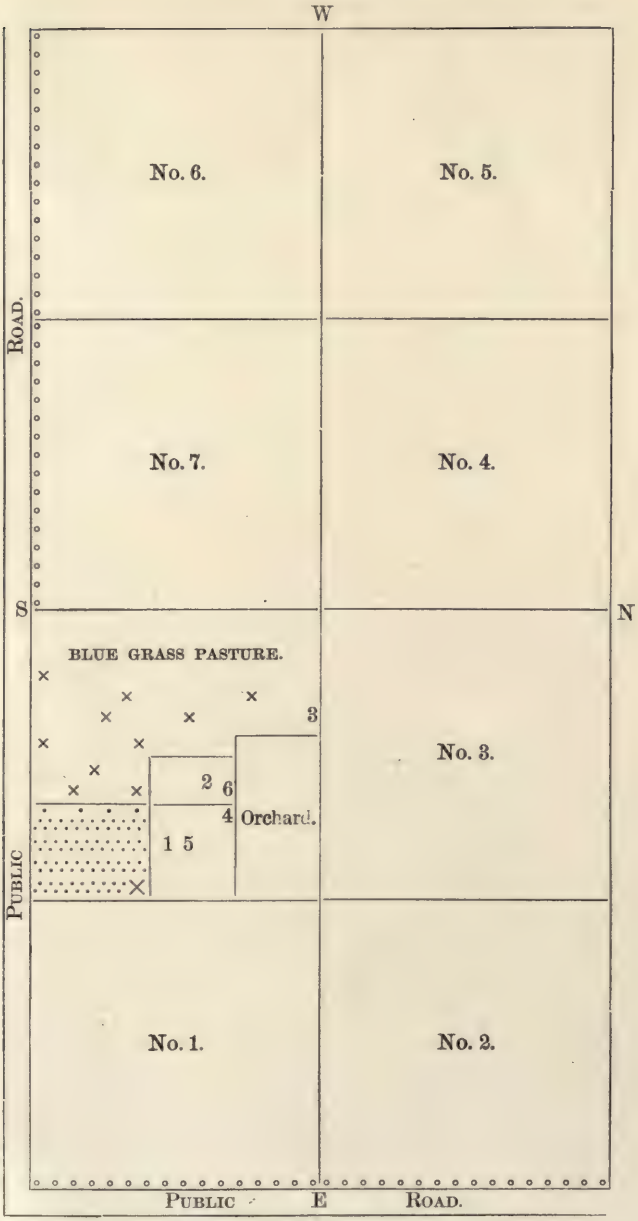
By attaching a table like this to each field, I ascertain the yield of each at a glance:

Year.	Kind of Crop.	Bushels 1st year.	Tons of Hay.	Price per Bushel.	Price per Ton.	Bushels of Seed.
1878	Potatoes	75		.35		
1879	Wheat	18		.90		
1880	Wheat	24		.90		
1881	Clover		30		$6 00	20
1882	Clover		25		5 00	22
1883	Corn	70		.35		
1884	Corn	65		.40		

The crosses in the plat of blue grass denote large forest trees, blackberry, ash, black walnut, elm, and sugar trees. They are from twenty to thirty inches in diameter.

COW STABLE.

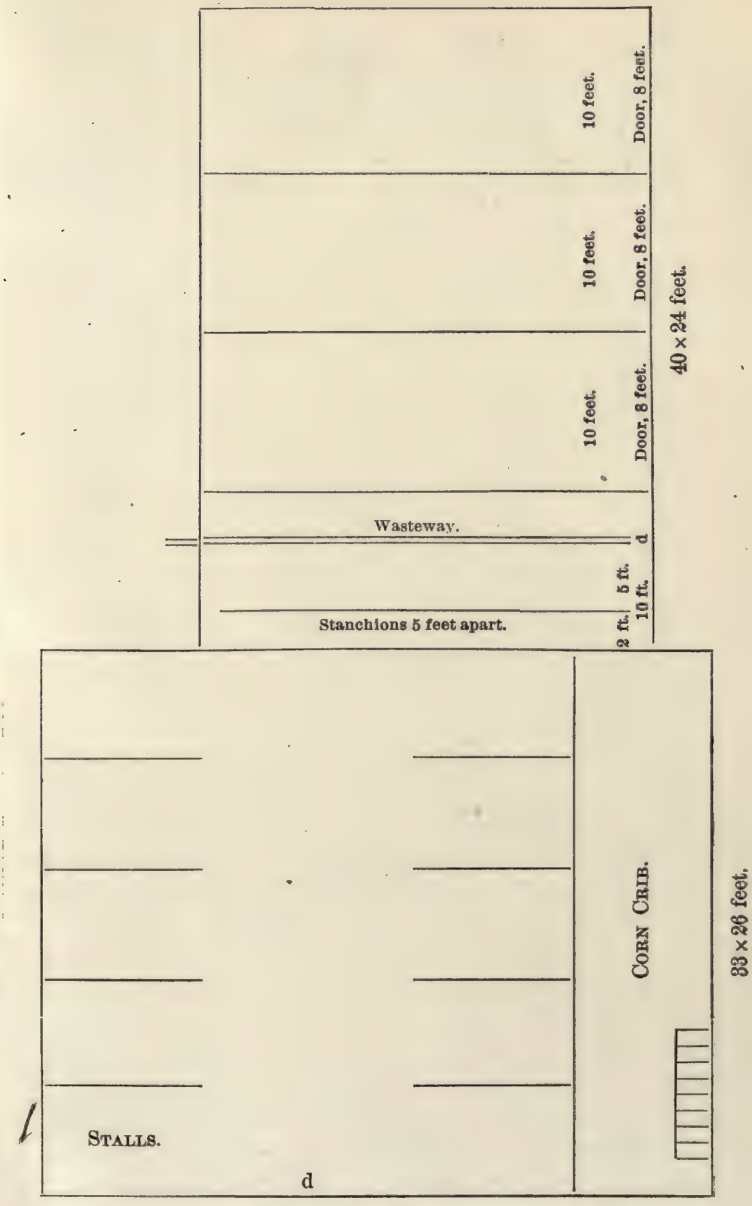
My stable for cows has sufficient space for the accommo-


W
No. 6.
No. 5.
ROAD.
No. 7.
No. 4.
S
N
BLUE GRASS PASTURE.
3
No. 3.
2 6
4 Orchard.
1 5
PUBLIC
No. 1.
No. 2.
PUBLIC
E
ROAD.

49

dation of five cows. Figure 3 shows a barn, sixty feet square, for hay and stock. Figure 4 is an outbuilding for hands to stay in. Figure 5 is a woodhouse and smoke house. Figure 6 is a building twelve by fourteen; the floor and ceiling of this building are both plastered. Where two pieces of scantling reach from the floor to the ceiling, about eighteen inches apart on each square of the building, I set a plow with the land side to these scantling, and then put pins or brackets in the scantling to hold another plow. I place it so high that it will not rest on the first plow. So on as long as I have plows to set away. I can thus take any plow out without disturbing the rest of the plows.

I have a cellar under the main building, eighteen by eighteen, and one under the kitchen fourteen by twenty-four.


10 feet.
Door, 8 feet.
10 feet.
Door, 8 feet.
10 feet.
Door, 8 feet.
40 × 24 feet.
Wasteway.
d
5 ft.
10 ft.
2 ft.
Stanchions 5 feet apart.
Corn Crib.
33 × 26 feet.
Stalls.
d

JOHN MILLER,

RICHLAND, GREENE COUNTY.

Soil — Stock Feeding — Timothy and Oats — Corn Crib and Barn.

My farm is situated in Richland and Fairplay townships, and consists of four hundred and forty-one acres, all under good fence. One hundred and fifty-five acres are White river bottom land and two hundred and eighty-six acres are upland. This bottom land is of the quality for which the west fork of White river is so favorably known. One hundred and thirty-five acres of this are under cultivation, and are exclusively used for raising corn. The upland is high, rolling ground, elevated fifty or sixty feet above the river valley. In some parts it is rather broken, and was, thirty years ago, covered with very heavy timber,—beach, poplar, black walnut, ash, and oak predominating. For a number of years I kept a saw-mill on this land, converting all the timber, not used for fencing or other farm purposes into lumber.

SOIL.

The soil on the north part is a loamy clay, while on the south and southwest it is a black, loamy sand. Here sandstone of durability is cropping out in several places, which has been utilized in constructing the farm buildings. Running water and springs are found in all but two fields. Ninety acres remain yet in timber, having removed the under growth, and sowed the land to blue grass. I use this for pasture. I have seventy-five acres in timothy and clover at present, forty of which will be cut for hay, and the rest pastured. Fifty-five acres are sown to Fultz wheat, and about twelve acres are planted in orchard, vines, small fruits and garden. To this must be added ground occupied by my buildings and yards, and two fields directly connected with the barn lot, and which

I keep for young cattle and horse pasture. Sometimes I plow them up.

STOCK FEEDING.

I combine stock feeding with grain raising. I sell no grain but wheat, and I feed all the corn, oats and hay I raise on the place. I raise no horses, and keep but seven head, three teams and an extra horse for general use, on the place.

FATTENING HOGS.

For a number of years I have fattened between four and five hundred head annually, averaging two hundred and fifty pounds, three-quarters of which I bought when shoats. But owing to the prevalence of hog diseases and low prices in market, I have lately paid more attention to cattle. Poland China and Berkshires are the breeds which I prefer. At the time of feeding cattle grain, either in the stable or the pasture, I allow a sufficient number of hogs to run with them to pick up the corn wasted. The usual number of cattle kept on the place is between forty and fifty, but I feed yearly seventy-five to eighty head, partly turned off from the grass, and partly corn fed.

COMMON STEERS.

I buy steers of average country grade and turn them off when just passed two years in Fall, and three years in the Summer. I feed first in Fall on bottom stalk fields, then on straw till the middle of February, then hay and corn till grass is plenty. I feed blue grass early in the Spring, timothy in Summer, and return to blue grass in the Fall. The last two years I raised those that averaged about one thousand pounds, and three years old thirteen hundred pounds. Their average gain, gross weight, during the pasture season is three hundred pounds. I keep a Durham bull, but have only graded cows, and I make enough out of butter and poultry to pay for all my family groceries. I have used a corn crusher, but believe it is cheaper to follow hogs after cattle.

SHEEP.

I have but fifty head of sheep, owing to the number of

cattle and hogs on my place, but I am strongly impressed that sheep raising and feeding will pay, and if hog diseases continue, I shall direct my attention to raising sheep.

HOW I RAISE CORN.

My bottom land is annually planted in corn. I drag the stalks down (will try a stalk cutter), rake them together, and burn them before plowing. Corn planted three and one-half feet apart both ways, and cultivated four times with a two-horse cultivator, yields sixty to seventy bushels of shelled corn per acre. I husk my corn as soon as dry enough to crib it, and my stalk fields are pastured with cattle. I devote thirty to forty acres of upland each year to this crop. For this purpose a sod is turned over early in Spring, planted and cultivated as would bottom land, and I have an average yield of fifty bushels per acre. Formerly I plowed my sod in the Fall, but I find corn grows stronger and is easier tended when I break early in the Spring. The upland crop, however, I do not remove, but my hogs are turned on as soon as the corn is in good roasting ears, say August tenth, and eaten off.

In September I turn the stalks under, harrow the ground, and spread about seven four-horse wagon loads of manure over the surface. Then I cross harrow and drill one bushel of wheat in to the acre, together with one bushel of timothy seed to each ten acres. I use the seed sower before the hoes. In the Spring I sow one bushel of clover seed to about ten acres, cross ways. My average yield of wheat for the last five years on all land sown is twenty bushels. On good land I sometimes raise a second crop of wheat; when such is the case, I always give it a light top dressing of manure. If I follow the oat ground with wheat, the manure is never omitted.

TIMOTHY AND OATS.

Sometimes I cut my first crop of timothy in part, for seed, but rarely more than needed for my own use. My average product of hay (pure hay, and clear of any and all weeds,) per acre, is two tons, but I have raised as much as three tons. I

only raise enough oats to partly feed my horses on, as it is not a profitable crop for this section of the State. It is much more exhaustive to land than wheat is, but it comes handy sometimes as a preparation for wheat sowing.

FALLOW LAND.

I never allow ground to lie in fallow, as I think it injurious on account of our Summer's heat, which dries out the land, and prevents the seed germinating, often.

By this simple rotation of crops I keep my land in fine condition, clear of weeds, and raise large crops, without reducing its productiveness. Above all, it prevents my soil from washing away.

BUILDINGS.

All my buildings are on the northeast forty acres of my place, in Section 15, Richland Township, on the highway leading from Bloomfield to Worthington. They consist, first, of a well painted and rodded two-story frame building, 24x36, attached to which, on the northwest side, is an L, a one and a half story building, 24x14. The main entrance is from the south, by a flight of cut stone steps, under a portico with a balcony above, into an eight-foot hall with two rooms on each side. This story is nine feet nine inches in the clear, while the upper story is nine feet three inches high. Otherwise it is like the lower story, and is reached by a stairway from the lower hall, under which is the entrance to the cellar, 24x24, whose walls are of cut stone, under-drained by tiles, and divided off for dairy and house use. The addition of 24x14 is used as a kitchen below, with two bed rooms above. There is also an outside entrance to the cellar. Along the kitchen and north side of the main building, I have a porch, with a cistern in front of the kitchen door. Another cistern lies on the east of the main building, and both have good pumps. My cellar is ventilated by three screened windows, with glass sash and solid outside shutters for Winter use.

SMOKE-HOUSE.

Some three rods northwest of the kitchen stands a frame

smoke-house, and the same distance in a northeasterly direction is a frame building, 24x14, used as a wood-house, with a meal room on one end. A supply of dry wood of different lengths is kept there the whole year, ready when needed. The house is always filled before Spring work commences. This, as well as the main building and kitchen, have tin gutters under the eaves, and, if wanted, the rainfall can be directed to either of the cisterns mentioned.

West of the dwelling I have a grapery and an orchard, containing apples, pears, cherries, peaches, quinces, etc. On the east side I have a vegetable garden, with small fruits, all fronting the highway, and divided from the house yard by substantial palings. East of my wood-house and north of my garden, is the wood lot, containing, also, the chicken house. East from this is the barn yard, where the barn and hog house are located.

BARN.

My barn faces south, and is of the kind known as a bank barn. The ground story is made of cut stone, and is 33x72, about nine feet high in the clear, and is divided into four fourteen-foot stables, with eight-foot feeding rooms between each two stables, and a four-foot passageway on the north side, which enables the person feeding, when once in the building, to reach any part of the stable below or the mow above, without opening an outside door. My two east stables are divided into stalls for the use of the horses. My feed room between them holds, in close boxes, oats, corn, and measures, attached to the feed box of each horse. Here, also, the hay is received from the mow, and, after being well shaken, is placed in the racks, which are almost straight, with a broad bottom board and a back to hold the hay in its proper place. The two other stables I use for cattle. Each contains a rack, lower, but similar in shape to those in the horse stables, and a manger along the whole length, to which cattle can be tied. The doors to my stables and feed rooms are divided in two parts; the lower part, for about four and a half feet up, are solid, while the upper part is made of slats for ventilation. The upper structure

is a frame overreaching the stone part on the south side about seven feet, preventing the rain from reaching the stable entrances, and forming a covered walk, in bad weather, when leading horses to water.

This floor is 40x72, and is approached on the north side by a wagon way. It is divided into four bends of eighteen feet each, and is eighteen feet high in posts. The two center bends have each a double door eighteen feet wide by twelve feet high, where the teams can drive on the upper floor. Doors are also placed on the south side for the purpose of passing the straw-carrier out, when threshing. Along the south side of the west bend is the granary, 18x12, and eight feet high, divided into bins, with a passway, under-door, and a lock. There is also an outside door, to load grain sacks direct into the wagon from the granary. Arrangements are found here under the overshot to hoist beef cattle, when butchering, leaving the blood and offal on the dunghill.

For ventilation of the upper floor I have seven slatted windows in each gable, with additionals in the sides. The east bend over the horses is always filled with hay. Grain is in the west bend, and also next to hay, so the thresher can be fed from both sides. The straw is partly returned to the barn, the balance stacked on the dunghill before the barn, where cattle run to it, and from whence it is taken for bedding while it lasts.

A horse hay-fork is in each end of the barn, for the purpose of unloading. Attached to the barn on the northeast side, is the implement room, 30x12, where plows, cultivators, drill, mower, etc., are always stored when not in use. On the east side I have another enclosed shed, 52x12, for wagons, sulky, spring-wagon, etc., and a large cistern, with pump, in the south end, where the rain water falling on the barn is collected. I have a long watering trough under the overshot, next to the horse stable, and a few rods east from this is a never-failing well of good water. In front of the barn the ground is removed. Here the dung from the stables is mixed with the refuse of the straw stack not used for bedding.

CORN CRIB.

West of the barn-yard, facing it, with gable end, stands a frame building on solid stone foundation (like all buildings) thirty by forty, twelve feet high, with six foot shed on south side. This building contains a corn crib forty by four, and ten feet high on north side, a sixteen feet floored passageway in the center, with large double doors in both ends, four hog pens ten by ten on the south side, whose partitions can be removed if needed for cattle feeding. In such a case, the six foot shed comes in use for hogs to run behind, being shut out from where the cattle stand. Above this feeding place a tight floor forty by ten is used for storing corn. Over the center passage corn or hay can be stored at pleasure, if needed for cattle feeding. The passage way is used for mixing slop and preparing feed; also for wagons and other purposes. Here I have also a cistern to secure the water collected from the roof. All buildings, except the dwelling, which I have painted, are kept white-washed, and it answers well. There are several old buildings on different parts of my farm that can be used as shelter for stock in bad weather, or for storing any thing when not in use.

O. DINWIDDIE,

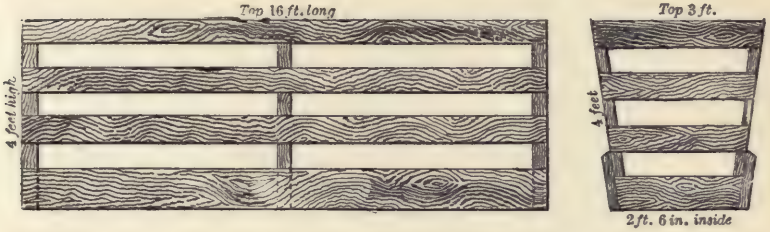
ORCHARD GROVE, LAKE COUNTY.

Sheep Racks — Cheap Hog Pen — Open Wells — Windmill.

SHEEP RACKS.

For sheep racks I use six-inch fencing, sixteen feet long, and two by four scantling of the same length. I saw the scantling into pieces four feet long, then lay two pieces on the barn floor, three feet apart at one end, and two and a half at the other. I then nail pieces of boards on, about six inches apart, letting the bottom board project about four inches at each end. I nail through the projecting ends into short pieces of two by four, set edgewise to the long pieces. Using this for

a pattern, I make one exactly like it, and one for the middle of rack, with only two boards nailed on. Stand these frames on the narrow end and nail a sixteen foot fence board on the inside of all three frames, about twelve inches from the floor.



I nail one at the top and one between, then nail a board same length, ten inches wide, on outside of short pieces. Now nail up the other side of rack the same way, and I have a sixteen foot rack, which two men can easily carry to any place.

CATTLE RACKS.

I make racks for cattle of the same shape, using two by four scantling eight feet long for the frames. For the mangers I use four by four, two feet high, letting the two lower boards on each end extend two feet each side of the main frame, which is about four feet wide at the bottom, and five at the top. On the outside of mangers, I bolt two by four scantling to the short manger posts. Four men can move this rack. Sheep or cattle racks may be made twelve or fourteen feet long if wanted.

A CHEAP HOG PEN.

I have a cheap hog pen made by building a foundation of ogs, or joists, on which to lay a floor twenty-four feet wide, and as long as necessary to accommodate the hogs. Toe-nail into the floor two by four scantling four feet high on both sides of the floor. Spike scantling on top of these for plates. Two feet each side of the center set up a row of scantling about ten feet high, supporting purline plates. This will make an alley the whole length four feet wide, with pens on each side ten feet wide. These pens may be partitioned as small as

necessary by making small doors opening from the alley into each pen. The rafters should be spiked or pinned together at the top. If covered with wild hay, ribs of light poles may be nailed across the rafters close enough to support the hay. If covered with lumber, only four ribs on each side will be necessary. For cleaning out the pens, and for ventilation in Summer, nail the lower board on each side about four inches from the floor. Then nail cleats at the sides of each pen, so that a six-inch board may be dropped in to keep out cold in Winter. The partitions may be movable, so as to change the size of the pens as often as desired.

WELLS.

I have tried open wells near the barn, but the surface drainings would creep in and taint the water with the manure. I do not want stock to drink water that I will not use myself. About four hundred feet from my barn is a rise of about four feet in the land. There I dug a well and put up a tub-mill for pumping water. Not caring to pump by hand, I placed the cylinder in the water (to keep it always primed), then lengthened out the rod attached to the valve to connect with the lever of the windmill. I use one and one-quarter inch gas-pipe from the cylinder to about six feet above the ground, through which the pump rod runs.

About four feet above ground I put on a T knuckle, in which I screwed a horizontal pipe to conduct the water into my reservoir tank, which holds about thirty barrels. From this tank I carry the water to my barn through inch pipe (it should be larger) laid four feet under ground. At the point where I bring the water to the surface, I attach a stop-cock to the horizontal pipe, with a lever reaching to the surface of the ground. A vent hole in this stop-cock allows the water to escape from an upright pipe (into a box sunk there) when shut off from the watering trough. The upright pipe rises about three feet above the surface, and with an elbow on top and a short piece of pipe fastened therein, the water can be carried to several pens by means of a piece of wooden spout. I intend to either dig a well or lay tile from my water troughs

to a pond near by, to catch the waste water when the troughs run over. Then, by letting a small stream run into the horse trough, with a waste pipe into the cattle trough, thence into the sheep trough, and on into the hog trough, I will have plenty of water for all the stock, without running every little while to turn it on.

A WINDMILL.

I make the windmill self-regulating by fixing an overflow pipe in one side of the tank to conduct the water into a bucket in the well, when the tank gets full. This bucket is hung on a wire attached to the mill, so that the weight of the bucketful of water closes the mill and prevents pumping. A small gimlet-hole in the bottom of the bucket allows the water to run out, and a weight on another wire opens the mill for pumping. With such an arrangement in the pastures, it need not be looked after every day, and stock will be much healthier than when drinking from muddy ponds or warm creeks. The windmill I have is not patented, and is an upright cylinder attached to a center shaft, which is connected by a pitman to the pump-rod.

PERCY ROUSE,

VEVAY, SWITZERLAND COUNTY.

Sheep Farm — Feeding Racks — Plan of Feeding — Bees.

A SHEEP FARM.

My farm is stocked with sheep. The hay trade in this county, at one time, was the most extensive of any county in the Union, and I have turned my hay barn into a Winter home for sheep. My hay-mow floor is below the floor of the barn, about seven feet.

Here I have arranged a feed rack for feeding hay and grain, constructed as follows: I have three cleats for a twelve

foot rack, and more if I need longer ones. These are three by eight inches, and twenty-four inches long; they are of hard wood. On these cleats — one at each end and one in the center, I nail a board, one by twenty-two inches and twelve feet long, with the edges beveled, to give it a trough shape when the sides are nailed on. On the sides and ends of this board, I nail one by six-inch plank, with the upper edge on side plank rounded, to prevent waste of wool while the sheep are eating. This forms the trough. On this trough I build a rack by first striking a line lengthwise in the center of the trough. With an inch and a half auger I bore — standing at the side of the trough — three holes close to but on the opposite side of the chalk line from where I stand, through board and cleat, boring the hole to the right of the center of the cleat. I then repeat with the auger the same operation on the opposite side of the trough. While boring the holes, the auger must be so held as to form a hopper five inches wide inside at the bottom, and four feet wide at the top, when three and a half feet high from the bottom of trough.

For standards to which to nail the lining, take two by two inch straight grained oak pieces four and a half feet long, properly shaped and driven in the auger holes in suitable form to receive on the inside the plank composing the hopper. This plank should be three-quarters of an inch thick, any width, and twelve feet long for a twelve foot hopper, and planed on the inside to help the hay slide to the bottom, so that the sheep can get it. I plane it on the outside, as also the standards and outside corners, which I take off so as to prevent a loss of wool by the sheep rubbing against rough edges. To side up the hopper I begin at the bottom, putting the plank on the inside, the lower one six inches above the bottom of the trough. The outside corner of the bottom side plank must be nicely rounded at the lower edge, to save the tearing of wool, as above. Let the edges of the siding be beveled, and lap to prevent the grain from wasting when thrown in for feeding. The ends of the trough are sealed up perpendicularly against the end of the siding.

I set these sheep hoppers about seven feet apart, in a row, one end of each even with the perpendicular of the edge of the barn floor above. I have suspended walks, or platforms, made of thick plank three feet wide, twelve feet high, level with the barn floor. I placed midway between the space of each pair of hoppers, and running parallel therewith, to walk on while feeding hay. Five of these hoppers twelve feet long, will accommodate one hundred head of sheep, and if made and arranged as above, each sheep can have its rations of corn before its nose within a space of fifteen seconds, by the attendants throwing with force a quart of corn in each hopper, then leisurely distributing the allotted feed in each apartment. Afterward with a long-handled pitchfork, carefully place the hay in each hopper, to be eaten by the sheep at their pleasure.

NO WASTE.

By adopting this mode of feeding sheep, not a grain of corn nor a spear of hay need be wasted. These sheep hoppers should be raised to the proper hight for the sheep to eat from, by setting them on blocks, two feet long, under each cleat, with a good supply at hand of extra blocks, to be used to raise them as litter accumulates in bedding the sheep with straw from time to time.

MANURE.

When this, the best of domestic manure, is to be removed, as it should be every year, the hoppers can all be taken to one side, giving free access for that purpose. Unquestionably, these are the sheep hoppers to feed sheep in. They cost but a trifle each, are easily made, and with care will last a lifetime. I claim no credit for originating the above.

I am, in a limited sense, engaged in bee husbandry. My mode of operation is as follows: I have built what is known in this section of the county as a "Faulkner Bee House," on which there is a patent, in which I have just as much interest as the man in the moon, no more, no less.

My house is nine by sixteen feet, eight feet story in the clear. It contains twenty-eight colonies of bees, twelve on each side and four in the end opposite the door. I use a small heating stove, as occasion requires, in continued cold or damp weather. In the very coldest weather, I can in thirty minutes raise the temperature to ninety degrees, thereby causing the bees to swarm their entire quarters. Or, if it is advisable I let them fly out in the open air. These are comfortable quarters for the bees, convenient and quick in handling them. A home for every thing, and every thing in its home, with perfect control over heat and cold, and total exclusion from the corroding effects of the weather on the bee boxes, are the essentials to successful bee culture.

COST OF BEE HOUSE.

My house, all complete, bees excepted, cost me one hundred and fifty dollars. It is floored and sealed with dressed pine flooring, and is sided or weather-boarded with poplar weather-boarding. It has a shingle roof, is painted a lead color, with two gutters to carry off the water. Taking into consideration its cost, I have no other item of my mixed farming that yields so good a dividend. My next outbuilding to be erected is a combined honey and fruit house, to be built, as regards walls, floor, ventilation, etc., after the order of my bee house.

MISSOURI.

W. J. BOOTH,

CENTRALIA, BOONE COUNTY.

Stock Farm — Tenant System — Pastures and Meadows — Sheep, Hogs, Horses and Mules — Water Float.

My farm is located three miles southeast of Centralia, a thriving village of one thousand inhabitants, through which runs the Kansas City extension of the Chicago and Alton Railroad, and also the St. Louis, Kansas City and Northern, recently consolidated into the Wabash, St. Louis and Pacific Railroad.

AN IMPROVED FARM.

My farm is improved, and arranged for a stock farm, and grass and corn are the main crops produced, which are consumed on the farm, and go to market in the form of live stock or its product. The farm contains one thousand nine hundred acres, mostly high, rolling prairie, the remainder being timber, growing on either side of a creek which runs through the center, a distance of a mile and a half. The timber is about a quarter of a mile wide on an average. The creek affords an abundant supply of stock water for this portion of the farm, while the timber makes excellent protection for stock, and furnishes fuel and rails.

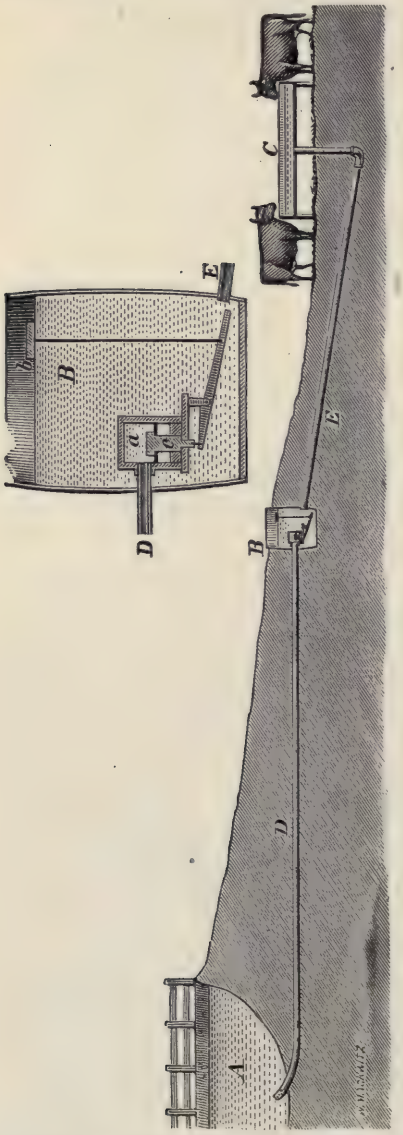
WELL FENCED.

The entire tract is under good fencing, which is equally divided between rail, board and hedge.

ARTIFICIAL PONDS.

My farm is conveniently divided into fields, ranging in size from a calf pasture of a few acres up to a four hundred

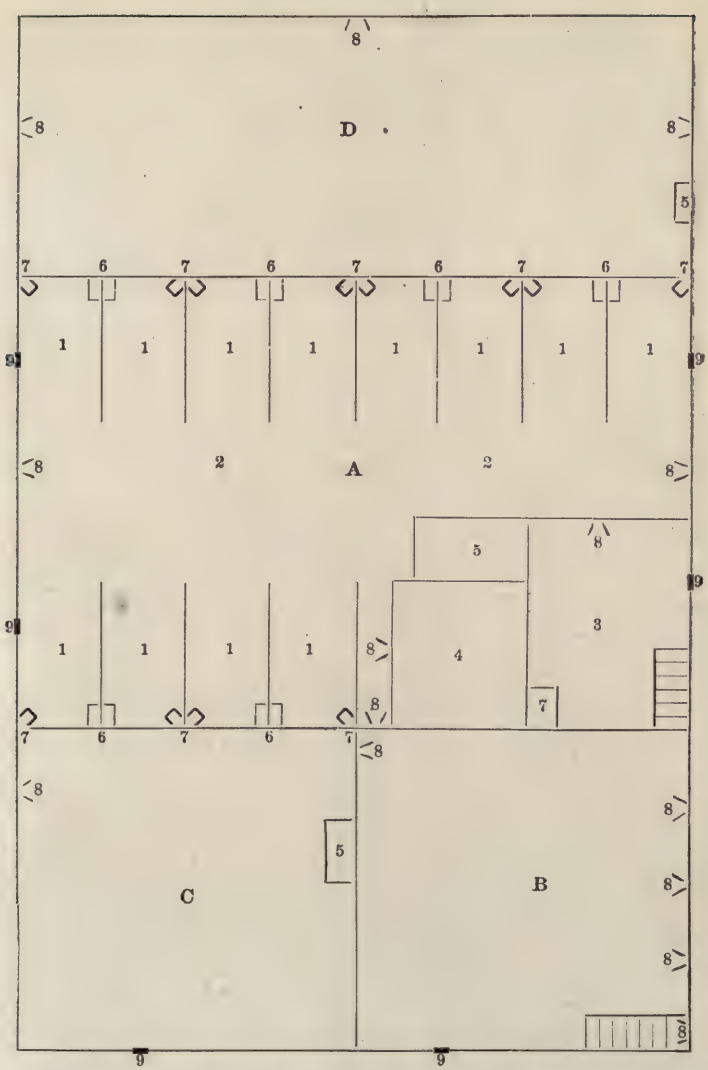
acre pasture or corn field. Each field is supplied with durable water, either from the creek mentioned, or from artificial ponds, which are fenced, and the water conducted to troughs through pipes laid in the ground. The ponds are located so that the water in them will be higher than the point where it is used, consequently the water forces itself through the pipes to the trough, and is regulated by means of float and valve. This gives a constant supply, but allows no waste.



They operate equally as well in Winter as Summer, and are a great improvement over the old way of allowing stock to run in the pond, which is soon filled up and made filthy.

BUILDINGS.

My buildings are constructed with a view to shelter stock and give storeroom for hay and grain. The first to be mentioned is a cattle and sheep barn, built on the bank or basement plan, the main building being forty by fifty-two feet, with basement ten feet high, and an upper story eighteen feet from the top of the basement to the roof. Around this main part is



A—Horse part of main barn, 30 × 40 feet. B—Wagon and carriage stalls, 20 × 30 feet. C—Calf and sheep shed, 20 × 30 feet, D—Shed, 20 × 40 feet. 1—Single stalls, 5 × 10 feet. 2—Floor between stalls, 10 × 40 feet. 3—Room for meal and cutter, 10 × 10 feet. 4—Harness room, 6 × 7 feet. 5—Water troughs. 6—Hay chutes, extending to upper story. 7—Feed boxes. 8—Doors. 9—Windows.

joined a shed twenty feet wide, except on the bank side, making a basement sixty by ninety-two feet, which is divided into such apartments as the stock require. Water is supplied by means of pipes as mentioned, and at as many places in the building as may be required. The upper story is reached by a driveway, on the bank side, to a floor which extends through the center of the upper story, on either side of which is a mow for storing hay. The hay is handled with a horsefork and carrier, and can be elevated to any desired hight. My grain bins are on the upper floor, and the grain is conducted below by means of spouts.

The next building is the horse barn, with sheep and calf apartments attached. The main building is forty by sixty feet, with outside posts eighteen feet high, which give ample loft room for hay, straw and sheaf oats. A horse fork and carrier is used to fill the loft with hay. There are twelve single stalls, each five feet wide, provided with large feed box and access to hay chute. These chutes extend from the manger to the upper story, where they are filled with hay, which runs down as it is used below. One supplies two stalls, and it is the most convenient and economical way of feeding hay to horses I have yet seen.

This apartment I have provided with a good two-inch floor, the stall floor being slightly elevated and inclined, so as to facilitate drainage and cleaning. The accompanying plan explains the ground floor of the whole building.

The upper part of A is a hay loft, and the upper part of B and C is divided into workshop and storeroom for sheaf oats, which reach No. 7 by a chute, and straw for bedding.

As no provision is made in this building for grain, except sheaf oats and ground feed, I erected a granary but a few feet away, which is rat proof, and arranged for all kinds of grain. It is twenty by thirty feet, with ten feet outside posts, and has a tight floor of yellow pine. The entire building stands on piers three feet high, thus making a good shelter for hogs under the building.

My farm is provided with several cow and sheep sheds in

various places, to accommodate stock as they may require. I also have a mill for storing and preparing feed for stock. It is twenty by thirty feet, with eighteen feet outside posts, placed on piers three feet high, which gives an additional room for hogs. On one end is a shed fourteen by twenty feet, in which is a boiler with twelve-horse power engine, which furnishes power for shelling corn, grinding and cutting feed and sawing wood, as well as the steam to cook feed and scald hogs. This room is supplied with water by means of pipes from an artificial pond. The mill is furnished with one large corn sheller, which has a capacity of one thousand five hundred bushels per day, and shells either husked or unhusked corn. It has also one large cutting box, suitable for cutting all kinds of feed, but is used mostly for cutting corn in the ear with the husks on it. Two men can cut one thousand bushels of ears per day, which is used for feeding calves and sheep. In fact, all kinds of stock eat it with very little waste, as it is cut up very fine. As the feed comes from the cutter, it is elevated to the top of the building, and run into a large bin sufficient to hold all that is cut in one day.

A pair of burrs are also used for grinding, with a capacity for twenty-five bushels per hour. Elevators are used for elevating shelled corn and meal to the bins in the upper story, where they can be drawn out through spouts as required. A circular saw is also run by the same power, which cuts all the wood required for fuel on the farm. In shelling and grinding corn, the cobs more than supply the fuel for the engine, so that but little wood or coal is required. The other buildings consist, in part, of a dwelling house, which is convenient and comfortable, if not ornamental, being one and a half stories high, with ten rooms besides kitchen and servants' apartment. There is a good supply of out buildings, such as smoke house, hen house, ice house, scale house, etc. There are also several sets of tenement houses and stables, for families who cultivate the land.

MY TENANT SYSTEM.

The land is cultivated by tenants, who are provided with

comfortable houses and conveniences for living, and who have the teams and tools to work from one hundred to two hundred acres of corn to the family, besides a few acres of oats and other minor crops; but corn is the great staple crop on the farm.

The conveniences for living, with a limited amount of pasturage and access to timber for fuel, are furnished with the land, and I receive two-fifths of all the crops raised, and have them delivered on any part of the farm I designate. This I prefer to cash rent, as the means are always at hand to pay the rent, and it is more profitable, as long as the proprietor has the stock and facilities for consuming the grain on the farm. The tenants have no claim to the stalk fields, and are obliged to have the corn out of the fields by the first of January. This obviates any conflicting interests that might arise when several parties raise corn in the same field, and gives the proprietor a chance to feed down the stalks at such time as they will not be injurious to the land. From thirty-five to forty acres are raised by one hand and team.

CORN.

The plowing is done by three-horse teams, with sixteen inch plows, after which it is harrowed and marked off one way, and then planted with a two-horse planter, operated by a man and boy, at the rate of sixteen to twenty acres per day. I cultivate the corn with two-horse walking cultivators, and when young I often harrow and roll, especially if the ground becomes very dry. Very little of the corn is either cut up or husked. Almost the entire crop is gathered from the standing stalk with the husk on it, when it is stored in large cribs.

AMOUNT OF LAND CULTIVATED.

The amount of land under cultivation is from four hundred to six hundred acres, and the revenue, not including the stalk fields, ranges from three to five dollars per acre, according to the kind of crop and market price of grain.

PASTURES AND MEADOWS.

My meadows and pasture land are used for the growing stock, and are kept under my immediate control, although, when there is a surplus it is sold by pasturing stock by the month. This I much prefer to leasing pastures or meadows for a stated time, as it is very important to protect the grass at times, as well as other crops. Pastures that are wanted for early Spring use should not be grazed close during the Fall or Winter, and close grazing in the Spring is often disastrous, especially when it is followed by a dry, hot Summer.

In seeding land for pasture my object is to get a good sod, and this can only be done by sowing a mixture of seed. I regard clover, timothy and blue grass as best adapted for this purpose in this locality. Where the hay is consumed on the farm, this mixture will make a good clover and timothy meadow for a few years, and then a clear blue grass pasture will follow, as the latter will run out all other grasses. It is an advantage to mow newly seeded land two or three years, as it kills the weeds that might come up. I would suggest the advantage of keeping a field of wild prairie grass, when it is possible.

During the three Summer months I regard this grass second to none for grazing purposes, especially in a dry season, such as the season of 1879. In improving my farm I reserved two hundred and forty acres of prairie grass for pasture, and I regard it as one of the most valuable fields on the farm.

STOCK.

Cattle is the most important item of live stock on my farm. I keep from fifteen to twenty high grade and thorough-bred cows, and always have a bull of good pedigree, consequently my stock is kept improving in quality and value. I have never introduced any thing but the Durham blood in my herd, as I regard it as the best beef producer, which is my ultimate aim in raising cattle. My calves are allowed all the milk, except what is required to supply the family, are weaned before cold weather, and put on fresh pasture and fed cut corn, meal, oats

and a little bran. They soon learn to eat dry feed, and when Winter sets in, are fed mostly on cut corn, and having good shelter, are in a shape to thrive.

As the farm will graze from two to three hundred cattle, the calves raised at home are a small per cent. that are required. Steers I buy at all ages, from a calf to a three year old, as opportunity and amount of feed require. The steers are full corn fed the Winter after they are three years old, and are marketed in the Spring or Summer following. I feed cut corn in large troughs, the fore part of the Winter, and as Spring approaches the corn is shelled and ground, so that by the middle of April they are entirely fed on ground feed. The change in their feed must be made gradually, and should be accomplished before the cattle are put on pasture in the Spring.

My steers, grown and fed in this way, average, when sold, from seventeen hundred and fifty to eighteen hundred and fifty pounds, and are usually sold, weighed and delivered on the farm, as is the case with all kinds of stock products. I have learned, from fifteen years' experience, that home prices and weights are preferable to shipping, and much more satisfactory in every way.

HOGS.

Hogs are raised and fed in connection with cattle feeding, and are an important item on a stock farm. When properly managed they afford about the best market for corn that the Western producer can find. My stock is mostly of the Berkshire breed, which I regard the best distinct breed there is for all purposes, although some of my best results have been a cross of the Chester White and Poland China with the Berkshire. This makes a very desirable feeding hog, but I prefer to keep the breeders of pure blood, no matter what stock or breed I select. I have one hundred and fifty hogs on the farm, which are allowed to mature at about sixteen months old, when they average three hundred and twenty-five pounds. Corn ground and cooked is a great advantage in the Winter for young shoats and brood sows with young pigs, but for Spring and Summer feeding, the meal should be soaked instead of cooked. My

experience is, that a good hog will produce, by proper shelter and care, ten pounds of pork for one bushel of corn, and will produce twelve pounds for the same amount of grain ground and soaked or cooked.

SHEEP.

Sheep are an important item, and no farm in this section of country should be without a well bred and properly cared for flock. It is idle to suppose that sheep require no attention and but little feed, for there is nothing on the farm that will pay better for a little extra feed and shelter than a flock of sheep. They yield a double income—wool and increase—either of which will repay proper care and management. My flock are mostly Cotswolds, with a few South Downs, all imported stock. The Cotswold is the most popular breed in this region, as it is a good wool and mutton producer, both of which command high prices.

The South Down is a much more hardy sheep, adapted to larger flocks, and is second to none for mutton qualities, but is not so heavy a wool producer. A cross of the two breeds makes a very desirable sheep, and I am at present experimenting in that direction.

My ewes are bred in September, and most of the lambs come in February. I do not experience any trouble in saving my lambs, as good close sheds are provided, and a piece of blue grass or rye is saved for them for early Spring use. The ewes I feed hay, sheaf oats and corn, up to the time of lambing, when bran is preferable for producing milk. The early lambs are often very much constipated for a few days after they come, which can be corrected by the use of a syringe and fresh milk with a little molasses.

This is a mild remedy and almost always effectual. The lambs I have weaned in the month of August, and a little extra feed is given them, so that by Winter they will thrive on dry feed. The ewes are bred to have lambs when two years old. I do not think it profitable to breed them younger than this. I have had considerable experience with Merino sheep, and find them superior to all others where large flocks are herded

and a limited range is a necessity. Our high, rolling prairies in these parts are well adapted for sheep raising, and are being utilized for this purpose as their advantages are better appreciated.

OTHER STOCK.

Horses and mules are raised on the farm to supply the teams, and a small surplus is disposed of every year, as it is better to have an animal to sell than one to buy. A few superior breeds of poultry, and a good supply of bees fill up the list, each one of which is successful in proportion to the time and attention given it.

In selecting a farm for an investment or a home, there are many things to be taken into consideration. After choosing the kind of farming to be pursued, whether grain or stock, a location must be selected suited to that choice. This part of the country is peculiarly adapted to stock growing in all its branches, as the land is dry and rolling, with ample facilities for obtaining water, while the soil can not be excelled for producing all kinds of grasses and coarse grain. Wheat has not, until recently, attracted much attention, but the crop is coming into better favor, and many farmers are growing it quite extensively. Our market is good, having competing railroads to St. Louis and Chicago, which insures cheap and quick transportation; and with the present strong upward tendency of real estate, our cheap and desirable land must soon become valuable.

MICHIGAN.

B. F. PARTRIDGE,

BAY CITY, BAY COUNTY.

Buildings — Cultivation — Barley — Oats — Potatoes — Fruit — Soil and Timber — Stock — Water.

OAK RIDGE FARM.

My house stands back from the Bay City and Wattronsville plank road about fifteen rods. A lane leads from the plank road back twenty rods, and then south and parallel with the plank road about fifty rods, and again back to the road, passing in the rear of the house, and between the house and barns, and other buildings, with the pear orchard in the field around the house, and other fruits adjoining. My apple orchard of eleven hundred trees is on the opposite side of the plank road.

My barns are situated more than one hundred feet apart, and the same distance from the house.

My water is carried from the windmill to the stables and yards in wooden water pipes.

WHEAT.

My mode of cultivation is to plant wheat every year, in more or less quantity. Some fields I drill in, while others I pulverize the ground with the Rand pulverizer, which buries the seed about right. Other wheat I drag in, but I prefer drilling and pulverizing, rather than dragging, as the seed is all covered, and will not freeze out as readily as when it is but partly covered.

I have never yet Summer fallowed my wheat land, but have sowed after peas, barley and oats, and have raised from

twenty to forty-three bushels to the acre. I have only once manured the land, and only a small piece then, before putting in the seed. I take the second crop of wheat off, seeding with timothy grass at the last wheat sowing, and I let this field remain in grass three or four years, then plow up in the Fall and put oats on in the Spring as early as the frost will permit, even while the top only is thawed out. After the oats are off, I plow again, and the next Spring I put in barley. Sometimes I have put in wheat as soon after the oats as I could plow and sow, which is about the first week in September in this latitude, though I have had good wheat which was sown the last of September. After my barley, I plow and drill in about one and three-quarter bushels to the acre of wheat the first week in September, and this land will then give from thirty to forty bushels of the best wheat to the acre. I have raised eighty-five bushels of oats, and fifty-two bushels of clean white barley to the acre. Barley must be sown as you do oats, as soon as you can get on to the land.

POTATOES.

I have raised from ten to twenty acres of potatoes a year. I think the best way to raise potatoes is to turn over the pasture sod late in the Fall, and then put on the pulverizer early. When the weather is dry and warm, I mark off the rows three and a half feet apart, and put in my seed at ten inches apart in the rows. I cover the seed with the plow, putting on the roller and flattening down the ridges. When the plants have appeared two or three inches above the ground, I put on a small, light, diamond-shaped, double drag, shaped thus: This is drawn by one horse by driving between the rows. I run over them about twice before they are ready to cultivate. Then I run the cultivator between the rows, till the soil is well loosened up. After a few days more I bring the shovel plow between the rows, throwing the earth on either side against the rows, and then finish up with the hoe, to straighten up and fix the plants. My work is now completed till I dig them, when I plow them out and pick

up, and then drag and pick up again, and I find that about all of them are saved.

FRUIT CULTURE.

Fruit culture has been a part of the business on my farm, though my orchard has just commenced to bear. I have small fruits only for family use, but have in cultivation a large variety of the gooseberry and currant, and the red and black raspberry and blackberry and black currants Grapes I also have, and some strawberries. My tree fruits consist of one thousand one hundred apple trees of the best sorts in proportionate varieties for season, market, and table uses.

PEARS.

My pears consist of some fifteen of the best varieties for the table, the season, and for market. They number five hundred trees, and are nearly all standards. I have about one hundred plum trees of the best varieties for use and market, and one hundred and twenty-five quince trees, of the orange variety, several crab apples, and a few cherry trees. The seasons, or soil, or some other cause renders the growing of the peach very risky, and I have abandoned its cultivation.

TREATMENT OF FRUIT TREES.

I plant my fruit trees on the best and dryest land I have, and make the land as rich and pliable as possible before planting. Then I measure off the ground I design to plant to trees, say for the apple, thirty feet apart each way. To save time and expense I plow late in the Fall, so that the dead furrow will come exactly where I want my row of trees. I then draw my old, rotten, barnyard manure, and place a pile just where my tree is to stand (after making the place for the tree). I now throw the top dirt in one pile, and the subsoil in another, so I can use the rich top soil around the tree in the Spring. I then scatter the dead furrow full of the same kind of manure, and let this matter stand till Spring, when the weather is warm and dry, and my time has come to plant the trees. I purchase direct from responsible nurserymen, ordering my trees in February or March. They will be on hand in time to

plant when the right time comes. When my orchard ground is ready, as soon as possible, I open my boxes and sort and place the trees in a trench already prepared, cover the roots, and wet them thoroughly. I now make a hole in the ground about the size of a barrel, fill it with water, and mix a batter of the clay subsoil. When I have properly trimmed my trees of broken limbs and roots, I dip them into this batter and plant as soon as I can, putting the rich earth from the top earth pile around the roots nicely and firmly, and making the ground hard all around the tree. My work is now done, though I am careful to set the tree a little lower in the ground than it was in the nursery.

I plant corn in my orchard, and give it and the trees good cultivation through the year. I remove the corn and stalks, and plow up to the trees late in the Fall, leaving the dead furrow equi-distant from the rows of trees. Then I put down an under drain in my dead furrow, after making it deeper, —a saving of much labor and expense in digging. My land is now ready for corn the next year. This corn serves to shade the bodies of the trees from the scorching rays of the sun, and the wind during the first two years. After I have finished planting the trees, I take a pail of soft soap and a brush and paint the trees from the ground up into the limbs, and do this again in July. By this means I destroy any borers or their eggs. This same practice applies successfully to all trees except evergreens, and perhaps it would benefit them, though I have never tried it. Maple, and all other shade and ornamental trees, I have treated in this fashion, and I have had clean limbs and green bark on all my trees, and they have got the start of the borers every time. It is my opinion that there is something in the soap that supplies a lack in the soil, for a few years at least, till the roots have reached far enough from the tree to find what it needs.

SOIL AND TIMBER.

My farm was very heavy timbered with oak, beech, maple, elm, basswood, soft maple and black ash. One part was

scarcely higher than another. My soil is a rich, black soil, with clay subsoil In some places a clay loam is the surface soil. The swales had a little deeper soil than the oak ridges, and all the land had to be drained by either under or open drains. My open drains are made by plow and scraper, into what we call call scoop ditches, and are so constructed that I plow across them at any angle, letting the plow run out at the ditch and setting in again on the other side, which leads all the dead furrows into the ditches. I can scarcely find any water on my farm, outside of these ditches.

The market here is good, and the farmer receives the highest price for his produce. Any man here can, with usual energy and forethought, make him a farm that will retain the native richness of the soil for any length of time. No lazy man need come here expecting to get his timber cut and his land cleared, and make him a farm, without labor on his part, or money enough to pay for it. But in case he does make a farm, its value is beyond that of farms in any locality I am acquainted with. The climate is quite as desirable as in any temperate latitude.

STOCK.

I do not raise fancy stock yet. I have, however, good grade cows, and good blooded horses. Mine are all roadsters, of the best kind.

HOGS.

I raise pure Berkshire, and think them the best.

FOWLS.

I raise a few chickens of the Buff Cochin and Partridge Cochin, crossed, which make nice large fowls and they lay large eggs and more of them than most other kinds. My turkeys are the common kind, as are my geese and ducks. I only keep for my own use.

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